



ILLINOIS INSTITUTE OF TECHNOLOGY

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Spring 2010

VIEW FROM WITHIN

Advanced medical imaging offers a new look at life

MELISSA SHYAN-NORWALT Inside the Animal Mind **VALDAS ADAMKUS** Manifesting A Destiny
RESEARCH Stabilizing Nanoparticles, Direct Digital Design and Manufacturing

letter from the President

“Change is good—you go first.” —*Anonymous*

It is not easy to embrace a culture of innovation, which we claim as a goal in IIT’s vision statement*, because it implies significant change on a continuous basis. Change takes us out of our comfort zone and challenges us to look at what we are doing in different ways, with the possibility that we should be doing something else staring us in the face. Very few people enjoy this exercise, but it is a critical precursor to advancement. I find students much more amenable to the idea of change; in fact, they often demand such a culture. One of the most enjoyable facets of teaching is addressing the students’ constant insistence on change—in what we teach and how we teach it. I am very pleased to report that our faculty members are also embracing the concept with very good results.

Some indicators that change at IIT is indeed occurring include:

- **Faculty research is at its highest level:** Research awards have more than doubled in dollar value this year compared to two years ago and, for the first time in an academic year at IIT, research awards have surpassed \$50 million.
- **New developments in undergraduate education are progressing:** Faculty and students have been working together to update our IPRO/EnPRO experience to version 2.0, and faculty groups are reviewing our general-education offerings and considering the adoption of a comprehensive first-year experience for undergraduates.
- **New facilities are supporting educational initiatives:** Due to the efforts of Vice President David Baker, we will have the first incarnation of the Idea Shop on campus. This new space, which will be a home for the IPRO experience, will host entrepreneurial endeavors and will be available for use starting this summer.
- **Student retention is improving:** First-to-second year retention has improved to 89 percent (our highest ever) due to faculty and staff outreach to students and the efforts of our retention task force.
- **Educational and research themes across the university are being developed:** Multidisciplinary projects in energy, design, sustainability, and improving the quality of life are underway.
- **The financial strength of the university is being restored:** We have instituted Responsibility Centered Management and, for the first time, our colleges are responsible for both income and expenses. The operating budget for next year will show a deficit of only 1.5 percent, the lowest since the early 1980s, and the budget will be balanced the year after.

What’s ahead? We are looking forward to continued faculty leadership as we work to achieve our plan. Perhaps design across the curriculum or a new definition of general electives will be developed and implemented. Maybe we will establish research teams that combine legal principles and social issues with scientific discovery—pertinent today because of the question of the patentability of genetic manipulation, for example. Thinking out of the box while building on our strengths will lead to changes that positively transform the university.

The way to distinguish yourself is to go first. IIT has that philosophy. You will hear more about change in the years ahead.



John L. Anderson
President

** IIT will be internationally recognized in distinctive areas of education and research, using as its platform the global city of Chicago, driven by a professional and technology-oriented focus, and based on a culture of innovation and excellence.*



IIT President John L. Anderson talks with students Juan Espinoza (CAEE 2nd year) and Abigail Vargas (CAEE 2nd year).



IIT MISSION STATEMENT

To provide distinctive and relevant
education in an environment
of scientific, technological, and
professional knowledge creation
and innovation.

- IIT Armour College of Engineering
- IIT Chicago-Kent College of Law
- IIT College of Architecture
- IIT College of Science and Letters
- IIT Institute of Design
- IIT Institute of Psychology
- IIT School of Applied Technology
- IIT Stuart School of Business

ADA STATEMENT

Illinois Institute of Technology provides
individuals with disabilities reasonable
accommodations to participate in
university activities, programs, and
services. Individuals with disabilities
requiring an accommodation should
call the activity, program, or service
director. For further information about
IIT's resources, contact the IIT Center for
Disability Resources at disabilities@iit.edu.

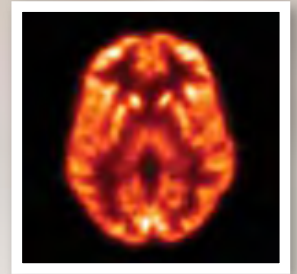
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IIT MAGAZINE ONLINE-ONLY CONTENT!

A new Web-only component has been added to
IIT Magazine online. Read extended coverage of
stories featured in the print edition as well as special
online-only content. Visit www.iit.edu/magazine
and find more!



Letters

Nuclear Story Sparks Comments on All Sides



As the holder of an M.S. degree in nuclear engineering from Purdue University and a B.S. in mechanical and aerospace engineering from IIT, I was delighted to read the article by

Richard Harth in the winter 2010 edition of *IIT Magazine* ["The Nuclear Option"].

What many people don't realize is that coal ash contains harmful elements such as lead, arsenic, selenium, mercury, cadmium, chromium, and thallium. And there are two more: uranium and thorium. Yes, uranium and thorium—elements normally associated only with nuclear power.

Furthermore, if it is true that carbon dioxide buildup in the atmosphere is a legitimate problem, and if we are to continue to build and operate coal-fired power plants, we will have to permanently sequester billions of tons of carbon dioxide every year as well as sequester trace elements to keep them out of the biosphere. Is it not silly that the same people who for decades have been crying in their champagne over having to store radioactive waste for centuries now propose that we store all that carbon dioxide and trace elements?

Paradoxically, it is precisely because these elements and carbon dioxide are not radioactive (or only weakly so) that they remain both biologically and environmentally active forever.

Regarding fuel reprocessing and storage of "radwaste": if we Americans are too hung up about plutonium and storing radwaste, I suggest we sell our spent fuel to Russia, China, or France, as they do not have these hang-ups. At least then, the energy potential of plutonium in our spent fuel will not be wasted.

—Alex Kovnat (MAE '71)

I read with keen interest the subject article ["The Nuclear Option," winter 2010]. I was very hesitant to open the magazine, wondering what I would find (maybe an irrational rationale for nuclear). Instead, I am very pleased that you are working hard on a solution to the nuclear waste problem. I do have a question, however: what's taking you so long? The world desperately needs a solution to the nuclear waste problem. If there is any way to accelerate your research, I suggest you pursue it with gusto!

In the meantime, you should be campaigning against the spread of nuclear power until solutions can be found to the problems of nuclear waste and the mining of radioactive material for nuclear power. Supporting nuclear power without having solutions for these issues in place is not ethical.

I refer you to the following articles to support my position regarding the mining of radioactive material. I certainly hope you take the time to read them:

www.orionmagazine.org/index.php/articles/article/4248

www.orionmagazine.org/index.php/articles/article/4247

—Russ Bukwa (EE '67, M.B.A. '72)

Well, I am terribly embarrassed. I know my alma mater is smart and skilled enough to know the truth: that global temperatures have been cycling up and down by several degrees for thousands of years, and the last few decades are clearly no man-made exception. Nevertheless, they (enthusiastically?) join the PC crowd with statements like "The U.S. (desperately) needs to slash carbon missions below 1990 levels by 2020" ["The Nuclear Option," winter 2010]. Or is all that just a poorly disguised sales pitch to gain the graces of the IIT Board of Trustees chairman, the CEO of a nuclear reactor company?

—Owen W. Dykema (ME '55, M.S. '58)

Searching for Direction

I've just finished reading the winter 2010 issue of *IIT Magazine*. I found it of interest and well done. The cover article was balanced and helpful. But I have a question: what are the red arrows in the "class notes" section meant to indicate? I seem to be unable to find a footnote or explanation. Please advise.

—J. Randall Johnson (ME '63)

(Editor's note: The arrows indicate alumni whose notes were gleaned during interviews conducted through IIT's alumni-reengagement effort, The Velocity Initiative, which launched in January 2009. While the past three issues of the magazine have included reports on the progress of Velocity, with sidebars explaining the purpose of the arrows, we have decided that the class notes section is a more logical home for the key, and have therefore made the move.)

Write back!

IIT Magazine welcomes all signed letters to the editor and edits letters for content and clarity. Please send correspondence to:

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Email: iitmagazine@iit.edu



campus

NAE Symposium Highlights Global Grand Challenges

Photos: George Todt

On April 21–22, more than two dozen leaders in engineering, sustainability, health care, energy, and science addressed some of the steepest issues facing society at the NAE Grand Challenges for the 21st Century: Chicago Summit 2010, held at the Fairmont Hotel in downtown Chicago. More than 400 guests attended from all over the country, representing industry and civic, government, and academic institutions.

Hosted by IIT and the Chicago Council on Science and Technology, the symposium was a partnership with Northwestern University, the University of Chicago, the University of Illinois at Chicago, and the University of Illinois at Urbana–Champaign.

Presenting sponsors included Exelon and A. Finkl & Sons Co., with other corporate partners—Boeing, Baxter International Inc., Emerson, Johnson & Johnson, Nalco, Sargent & Lundy, and the Willdan Group—supporting the summit. Nonprofit organizations that contributed to the funding and planning of the summit included The Chicago Community Trust, IIT Pritzker Institute of Biomedical Science and Engineering, and IIT Wanger Institute for Sustainable Energy Research.

The Chicago Summit is one of five summits being held throughout the country this year as part of the National

Academy of Engineering’s Grand Challenges initiative, which seeks to address and solve 14 issues the NAE has identified as priorities for the national security, quality of life, and sustainable future of the United States. The four topic areas discussed at the Chicago Summit were clean water; carbon, energy, and climate; urban sustainability; and global health.

Each topic area was addressed by a keynote speaker and featured a discussion by a panel of experts. Keynote speakers included Charles O’Melia, Abel Wolman Professor of Environmental Engineering Emeritus at Johns Hopkins University (clean water); John P. Holdren, assistant to the President for Science and Technology, and director of the Office of Science and Technology Policy (carbon, energy, and climate); Roger Frechette, president of PositivEnergy Practice (urban sustainability); and Tachi Yamada, M.D., president of the Global Health Program for the Bill & Melinda Gates Foundation (global health).

Additional keynote speakers included U.S. Secretary of Transportation Ray LaHood, Exelon Chairman and Chief Executive Officer John W. Rowe, and NAE President Charles Vest. IIT President



Moderator Nesita Kwan of NBC 5 Chicago News with Global Health panel members Eric E. Whitaker, University of Chicago Medical Center; Norbert G. Riedel, Baxter International Inc.; Marie Denise Milord, University of Notre Dame; and Father Thomas Streit, University of Notre Dame

John Anderson co-chaired the event, and Armour College of Engineering Dean Natacha DePaola served on the wrap-up panel.

One goal of the national Grand Challenges initiative is to educate young people about the role of engineering and science in solving global issues. A special educational component of the Chicago Summit was tailored to the more than 200 high school and university students in attendance. This included a poster competition and a special student session, where students learned more about the sponsoring universities and discussed the summit topics with fellow students.

The findings from the Chicago Summit will be joined with those of the four other regional summits taking place nationwide. A final report of outcomes from the Chicago Summit will be available at www.iit.edu/grand_challenges.



Charles Vest, NAE president, delivers the dinner keynote address.

IIT WELCOMES NEW TRUSTEES

At its February 17, 2010, meeting, the IIT Board of Trustees inducted two new members.



Andrew V. Agostini [left] is principal and owner of J. L. Woode, Ltd., a privately owned investment and real-estate development company.

Michael A. Pulick is senior vice president and president, Grainger U.S. Business, of W. W. Grainger, the leading industrial distributor in North America.

Rowe Delivers "State of the University" Address



IIT Board of Trustees Chairman John W. Rowe

John W. Rowe, chairman and chief executive officer of Exelon, addressed the IIT community in his role as chairman of the university's Board of Trustees on January 19 in Hermann Hall. IIT President John Anderson invited Rowe to speak to faculty and staff.

While acknowledging that IIT has been impacted by the economic downturn and that an action plan for recovery was imperative, Rowe pointed out that advancement opportunities for the university are huge. He cited IIT's technology focus, strong leadership, new strategic plan, and hallmark initiatives such as the Interprofessional Projects (IPRO) Program as contributing to making the university a powerful academic institution.

Rowe told the audience that he reads history nightly, in part because he believes it provides special insight into human organizations. He noted that the early days of IIT Institute of Design, freshly infused with the spirit of Germany's Bauhaus cultural movement, could inspire innovative change today.

"It's going to take learning, entrepreneurship, and technology to rebuild a better economy, let alone a better society. It's going to take people who learn from the kinds of things we teach at IIT. It's going to take people who can put them all together," said Rowe. "It literally is going to take a better Bauhaus right here in Chicago. Why shouldn't we be the ones to do that?"

FollowUP

Updates on the people and places previously covered in IIT Magazine

"New Grid in Town" Spring 2009

Perfect Power at IIT—a premier energy-distribution system of smart grids on Main Campus—achieved its first phase of completion this winter. Representatives from IIT, Galvin Electricity Initiative, S&C Electric Company, and Intelligent Power Solutions, LLC gathered in Siegel Hall on February 12 to make the announcement.

The phase marks the completion of the system's first high-reliability distribution loop, which serves Alumni Memorial Hall, Hermann Hall, Perlstein Hall, Siegel Hall, and Wishnick Hall, and the automation of the university's north substation. These buildings now have automatic fault detection and distribution information that will allow for greater understanding of electricity usage. The automation of the south substation and the installation of the high-reliability distribution loops that serve other campus buildings will be completed over the next four years of the five-year project.

"Midwestern Night's Dream: Imagining High-Speed Rail" Winter 2010

Illinois moved closer toward plans for a bullet train network with the passage of a Senate bill on March 18 creating the Illinois and Midwest High-Speed Rail Commission. The 15-member body will report on the best governmental structure for a public-private partnership to design, build, operate, maintain, and finance a high-speed rail (trains capable of traveling in excess of 150 mph) system for Illinois and the Midwest. The commission will also look at ways to integrate high-speed rail into existing and planned Amtrak expansions, airports, and public transportation systems.

STUDENTS SPEAK ASKS STUDENTS TO TALK BACK

It is not unusual for college students to express strong opinions about the university they attend. More rare, as most students will attest, is whether anyone listens—let alone responds.

To address the gap between student opinion and administrative action, President John Anderson and Provost Alan Cramb initiated Students Speak to provide a quantitative base for measuring IIT student satisfaction with university departments that provide services ranging from meals to housing to financial aid. The goal was to obtain feedback from as many students as possible in order to facilitate actionable results that are meaningful to a majority of students.

“Many times administrators hear that something is a problem only when students complain about it,” says Bruce Fisher, director of IIT’s Center for Research and Service, who advised the team of eight students who led Students Speak. “This makes it difficult to draw themes or to identify causal factors.”

The Students Speak team created and administered a 114-item survey last October, and presented its findings to administrators and fellow students during the spring semester. The survey was unique because it was both student-run and received a high response rate. In total, 2,721 students responded, or 35 percent of all undergraduate and graduate students. Fisher says student-survey response rates typically hover between 5–20 percent; he credits student ownership of Students Speak as a likely factor in the high response.

“The high response rate made the numbers more legitimate,” says Elizabeth Corson (CHE 3rd year), a member of the Students Speak team.

According to the executive summary of the Students Speak survey report, the “vast majority of students feel that the IIT staff treats them with respect.” Of the 24 departments rated in the survey, 12 received a favorable (satisfied or very satisfied) rating of 74 percent or higher and 17 departments received 71 percent or higher. The summary also reported that, in general, students feel safe on campus.

Identified as a concern was the difficulty of navigating the university’s administrative units; seven departments were highlighted as most in need of improvement. Each of these areas addressed student concern directly, outlining their plans for improvement in department summaries that appeared in a special Students Speak survey report published in *TechNews*, the student newspaper, and in some instances meeting with the survey team in person.

“I was really happy about the response from the administration. Everyone has been willing to find solutions, and we’ve already seen a lot of changes,” says Corson. “Students know that if they view something as wrong, they have the opportunity to fix it.”

Students Speak is intended to be an annual survey that will support IIT’s long-term strategic goal of achieving excellence across all university programs. Fisher already describes it as a “student-led cultural transformation.” As lagging departments are identified and improved—Anderson and Cramb have set the goal of 90 percent or higher favorable rating for each area—the scope of the survey and its questions will be modified to focus on continued improvement.

Front row [left to right]: Kathryn Weissman (CE 4th year), Elizabeth Corson (CHE 3rd year); back row [left to right]: Danny Varghese (BA 3rd year), Bruce Fisher, Piyush Sinha (CPE 3rd year), Seth Thomas (AE, ME '09, M.S. candidate), and Brian Kibbe (ME 3rd year)



Photo: Bonnie Robinson



TOTAL FITNESS

Jason Neal, IIT's new director of intramurals and recreation, enlisted in the United States Army because he "wanted to help make the world a safer place." A chief reason Neal joined the IIT community last August is equally profound in its sincerity and simplicity: to help students, faculty, and staff live life fully and fitly.

"There are problems and there are solutions. For many problems, the answer is, 'Come to Keating,'" says the ebullient yet practical Neal, referring to Keating Sports Center on Main Campus. Perhaps influenced by his military years (2004–09)—spent partly in Afghanistan and Iraq—Neal provides several examples in a voice that rings out in perfect cadence: "If you want to lose weight—come to Keating. If you want to gain muscle mass—come to Keating. If you want to run faster, jump higher, become more flexible, or learn how to relax—come to Keating!"

Neal is quick to cite that if current obesity trends persist, more than 40 percent of adults in the United States will be considered obese by 2018. The sobering projection was released in late 2009 through a study sponsored by the United Health Foundation, Partnership for Prevention, and the American Public Health Association. The National Institutes of Health defines obesity as being approximately 30 pounds overweight.

Sports captured Neal at the age of 8, when he became a wrestler and began to realize the impact a good coach could have on his life. From that point onward, Neal aspired to influence others' lives through word and action. In high school in New York, Neal was on both the wrestling and cross-country teams. As a teenager, he joined the Civil Air Patrol and became cadet commander of a 120-member squadron. Neal then enrolled at Lake Forest College in Illinois, where he studied international relations and completed an internship as a track and field assistant coach at Lake Forest Academy.

Before going on active duty in the military, Neal added to his athletics experience by serving in administrative and coaching roles in sports and recreational activities with park district groups, youth groups, and academic communities such as Elmhurst College and Lake Forest Academy. He also became a certified personal trainer through the American Council on Exercise.

Neal is hopeful that new recreational offerings in Argentine tango and Pilates, teamed up with more traditional sports fare like racquetball, will bring more members of the IIT community into the fitness fold, providing long-lasting benefits to their physical and mental health.

"By investing their time and energy," says Neal, "they'll be creating friendships that they may have for the rest of their lives and learning how to adopt a healthy lifestyle, too."



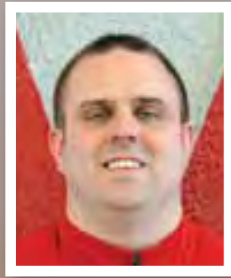
Jason Neal

MORE  ONLINE

IIT Intramurals and Recreation:
www.illinoistechathletics.com/f/Intramurals_and_Recreation.php

IIT Athletics Welcomes Soccer Leadership

The Lady Hawks women's soccer team has a new head coach in Marc Colwell, who came to IIT from the Junior Irish Soccer Club in South Bend, Ind., where he served as assistant director of coaching and director of goalkeeping. Colwell also has extensive higher education experience and was on the staffs of Bethel College, Earlham College, Lakeland College, Saint Mary's College, and Transylvania University.



Marc Colwell

"The combination of the academic reputation of the university and the setting in Chicago made it a very easy decision," says Colwell, who hails from South Bend, of his choice to join IIT. "I was also won over by the warm welcome I received by the team, athletic staff, and the student body on my visit."

Lee Hitchen, who stepped down as IIT athletic director, will stay on as coach of the Hawks men's soccer team.

Photo: Bonnie Robinson

SHPE-IIT Named Most Valuable Midwest Chapter

IIT's chapter of the Society of Hispanic Professional Engineers is only one year old, but it is already at the top of its class.

The 40-member organization was recognized as the 2009 most valuable chapter for the Midwest region at the annual SHPE Conference, held October 28–November 1, 2009, in Washington, D.C. SHPE-IIT also earned high marks from conference judges for a speech delivered by current President Raul Vasquez Jr. (BME 4th year) and Vice President Jose Luis Guerrero (AE, ME 4th year).

In 2008, a group of eight IIT students began working independently, as part of Latinos Involved in Further Education, to bring an official SHPE chapter to IIT, first by attending the annual SHPE conferences, and later, by hosting a variety of campus events. One of the group's main objectives was to help connect fellow students with jobs and internships.

"When I attended the 2008 conference, I was offered an internship at Baxter. I will never forget how exciting it was to get that phone call that I would have an exciting job for the summer. I want other students to have the opportunity to share that same feeling," says Vasquez.

Throughout the past year, since SHPE-IIT was formed, the chapter has hosted several events with major companies, including Baxter, John Deere, and Google. For the spring 2010 semester, the group planned Tech Talk events with companies including Google and Exelon, during which company employees discussed career opportunities with the students and offered them an inside look at life within their fields of interest.

SHPE-IIT members emphasize that although the organization focuses on the advancement of Hispanic engineers, all students can join the chapter and benefit from its services.

"Starting college is a pretty intense, overwhelming experience," says Eddie Paulino (ARCE 1st year), SHPE-IIT external vice president. "I joined SHPE shortly after starting IIT, and the other members have helped me become more involved and guided me to great opportunities as a freshman."

SHPE-IIT members are also working with a junior SHPE chapter at Farragut Career Academy, a Chicago high school, tutoring Farragut students in several subjects and offering third-year students at the school a practice ACT test. The chapter hopes to work with additional schools in the future to continue to diversify its group. SHPE-IIT also plans to reach out to IIT alumni to provide an even stronger networking and mentoring experience for its members.

www.shpe-iit.org

SHPE-IIT Executive Board members discuss strategies at their weekly meeting. [Left to right] Eddie Paulino (ARCE 1st year), Raul Vasquez Jr. (BME 4th year), Jose Luis Guerrero (AE, ME 4th year), Raquel Alvarez (CE 3rd year), Hong Yong Ip (ME 3rd year), and Lorenzo Perez (CE 3rd year)



Dennis Roberson, vice provost for corporate relations and strategic initiatives, was selected to head the implementation of the university's new strategic plan, *Many Voices, One Vision: A Strategic Plan for IIT 2010-2014*. Roberson is leading the newly formed Strategic Plan Assessment Advisory Board, which consists of 20 students, faculty, and staff from throughout the university who meet regularly to chart the progress of the implementation of the plan.

"We have implemented a rigorous way of tracking our progress. You get what you measure and what you encourage," says Roberson.

Progress includes developments in the below priority areas outlined in the plan.

Distinctively define the IIT graduate

IIPRO 2.0 is rapidly emerging as an enormous enhancement to IIT's flagship interdisciplinary program. This includes a new structure with front-end training in skills needed for the operation of a successful IIPRO, including project management, leadership, teamwork, and presentation skills. IIPRO also has an exciting new home in University Technology Park, the Idea Shop, which will be the high-profile center for all IIPRO activities.

The Leadership Academy—which provides developmental training for students with exceptional leadership potential—has generated four new goals to add to its original goal identified during the strategic planning process. These include increasing undergraduate student participation in the academy to 40 percent and sophomore participation in the Leadership Academy Retreat to 50 percent, launching a freshman leadership retreat, and supporting the development of a new International Academy.

Increase the impact of research by focusing on interdisciplinary themes

IIT Wanger Institute for Sustainable Energy Research has been the center of a renaissance in research at IIT, accounting for more than \$27 million in new research funding since June 2008. WISER, with its focus on energy and sustainability, is actively pursuing the development of significant partnerships with industry, research, and academic partners; the continuation of its seed grant research program; the launch of educational interdisciplinary programs in energy and sustainability university-wide; and the launch of the WISER Distinguished Lecture Series in Sustainable Energy.

Promote innovation and excellence throughout the university

In addition to the launch of the International Soft Landing Center of Chicago in UTP's Technology Business Center [see below], the Incubator has begun the construction of 28,000 square feet of wet and dry labs in its south wing.

Elevate engineering's reputation to international stature

The National Academy of Engineering Grand Challenges for the 21st Century: Chicago Summit 2010, which IIT co-hosted, enhanced the visibility of engineering at IIT, with more than 400 leaders from industry, nonprofit organizations, high schools, and universities attending [see page 3]. Additionally, Armour College of Engineering has hired several new faculty members.

● www.iit.edu/mvov



UTP Opens International Soft Landing Center of Chicago

A new collection of furnished offices, the International Soft Landing Center of Chicago, opened in December 2009 on the lower level of the Technology Business Center, in University Technology Park. Taking its name from the economics concept of a "soft landing," the seven-suite facility is designed to help international technology companies ease their way into the North American market. UTP will provide "wrap-around" services for international companies—introducing them to local markets; supporting their needs for language support, technical support, and acculturation; and providing secretarial services. IIT's strong international tradition, including students and faculty from all over the world, makes this an ideal location for expanding companies. Leases are designed to be affordable and flexible.

- UTP is also now host to eMotion, a student-owned company founded through the help of the Interprofessional Projects (IIPRO) Program and the Knapp Entrepreneurship Center. eMotion provides a safe method of social networking for "tweeners," girls ages 7–12.
- Last December, All Cell Technologies, an IIT-founded company, graduated from UTP's Incubator and established manufacturing facilities in nearby Bridgeport. All Cell produces thermal management systems for lithium-ion batteries used in the transportation industry.

The Human Side of Technology

For many people with disabilities, participating independently in exercise activities can be intimidating and, sometimes, nearly impossible. But with the help of Assistant Professor of Psychology Frank Lane and his students, these activities may one day become routine.

Lane directs IIT's Certificate in Rehabilitation Engineering Technology Program, which includes a series of three courses on the relationship between engineering and psychology. The program has benefited greatly from Lane's five-year, \$500,000 training grant from the United States Department of Education to educate graduate students and practitioners on rehabilitation engineering technology (RET) for persons with disabilities. Lane was able to make the entire program available online, with more than 20 educators and students nationwide completing the course over the past two years.

"The most exciting part of this program, and working at IIT, is seeing people from very different fields come together to use their individual expertise to solve a common problem," says Lane, who joined IIT in 2006.

Lane also oversees the Interprofessional Projects (IPRO) Program course IPRO 310: Assistive Devices for Blind Swimmers and Other Exercise Activities, which was named a top IPRO project at the spring and summer 2009 and spring 2010 IPRO Day conferences. In this project, undergraduate students from a variety of disciplines are working together to research and understand what technology and assistive devices would be most useful to visually impaired and blind individuals, and to develop the actual devices. Currently, the students are working to create a perimeter within a swimming pool using an electromagnetic field device, which blind or visually impaired swimmers will use to help determine their orientation within the pool. The receiver device, which is installed within a wristwatch, will emit a noise and vibrate if the swimmer is approaching the perimeter.

When Lane began working with the IPRO in the spring 2009 semester, he educated the students in conducting surveys and stressed the importance of understanding the needs of the people whom the technology will eventually serve. Now, the students regularly visit the Chicago Lighthouse, a social-service agency for the blind and visually impaired, to survey its members on which devices would be most useful to them when exercising independently, particularly when swimming, and to test these devices.

"Working with people at the Chicago Lighthouse brings a human aspect to what is often considered a technology project," says Lane. "The students' work has been so successful because they are surveying people who will actually benefit

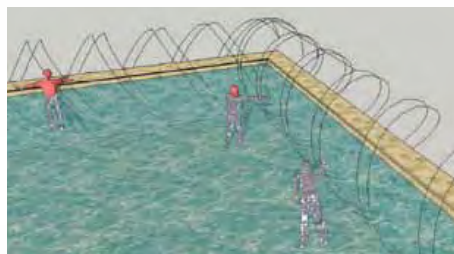


Illustration of the perimeter created within a swimming pool using an electromagnetic field device

from this technology, rather than just creating technology for technology's sake."

The group is currently testing the device on IIT students wearing goggles that impair their vision. The next stage of testing, planned for the fall 2010 semester, will include people from the Chicago Lighthouse and will bring the group closer to completing and implementing the prototype device.

"I have learned a lot about teamwork, responsibility, and leadership while working on IPRO 310," says Jeff Reilly (PHYS 3rd year), who has taken the course for three semesters, serving two of those as team leader. "The ability to play a part in the development of something that can make such a powerful difference in people's lives is a great feeling."

Members of IPRO 310 [left to right]: Joseph Taylor (COMM 4th year), Michaela Healtton (CHEM 3rd year), Aubrey Chipman (BME 3rd year), Kimberly Dykeman (PSYC 2nd year), Michael Schafer (ARCH 4th year), Jeff Reilly (PHYS 3rd year), and Assistant Professor of Psychology Frank Lane



MORE ONLINE

IPRO 310: http://ipro.iit.edu/project-listings/current-projects#Spring2010_310

Frank Lane profile: www.iit.edu/psych/people/profiles/frank_lane.shtml

Chicago Lighthouse: www.chicagolighthouse.org

Roya Ayman

Roya Ayman, professor at IIT Institute of Psychology, was named a fellow of The Leadership Trust Foundation (Ross-on-Wye, Herefordshire, United Kingdom) in recognition of her contribution to the field of leadership.

Marshall Brown

Marshall Brown, assistant professor at IIT College of Architecture, received the New Faculty Teaching Award given jointly by the Association of Collegiate Schools of Architecture and the American Institute of Architecture Students. The award recognizes demonstrated excellence in teaching performance during the formative years of an architectural teaching career.

Patrick Corrigan, Darsh Wasan, and Richard Wright

IIT recently awarded three faculty members the title of Distinguished Professor for preeminence in their fields of expertise, based on their scholarly work and the excellence of their teaching.

- Patrick Corrigan, IIT Institute of Psychology, whose field of expertise is the stigma associated with mental illness
- Darsh Wasan, IIT Armour College of Engineering, whose research interests lie in the areas of colloidal and interfacial engineering to solve energy, environmental, and food problems
- Richard Wright, IIT Chicago-Kent College of Law, whose work has reshaped thinking about the foundations of legal liability, particularly with respect to causation, reasonable conduct, and attributable responsibility

Alireza Khaligh

Alireza Khaligh (Ph.D. EE '06), assistant professor at IIT Armour College of Engineering, received a 2010 Ralph R. Teetor Educational Award in recognition of his contributions to engineering education initiatives through the Society of Automotive Engineers.

Norman Lederman

Norman Lederman, professor and chair of the Department of Mathematics and Science Education, was named a fellow of the American Educational Research Association for excellence in research. He was also named a fellow of the American Association for the Advancement of Science for distinguished leadership in science education.

Andrew Metter

Andrew Metter, adjunct professor at IIT College of Architecture, was honored with the 2010 Institute Honor Award from the American Institute of Architects for his work on the Serta International Center in Hoffman Estates, Ill.

Philip Nash

Philip Nash, professor of materials engineering at IIT Armour College of Engineering, was named a fellow of ASM International, the United States-based materials information society. Nash was recognized for his research contributions in metallurgical thermodynamics and phase equilibria of metallic systems, and for mentoring undergraduate and graduate students.

Boris Pervan

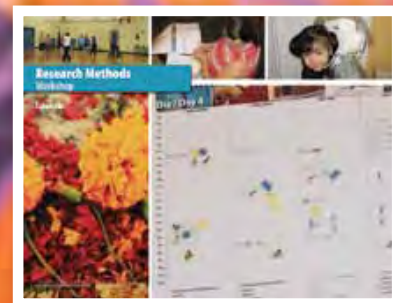
Boris Pervan, associate professor in the Department of Mechanical, Materials, and Aerospace Engineering, was named a fellow of the Institute of Navigation for his contribution to the advancement of differential GPS technology and integrity assurance, excellence as a teacher, and service to the institute.

MICROCOSM *for* CHANGE

For more than 15 years, Judith Gregory, assistant professor at IIT Institute of Design, has focused on health informatics and user-centered design, and has led efforts in **Rethinking Health**, an ID initiative that explores how design thinking could improve the country's health care system. As part of that initiative, her latest project—**Wellness Experience Research**—moves design from the drawing board and into the lives of individuals in Chicago's Latino communities who are learning how to better understand and decrease their risk for chronic health issues such as diabetes and obesity.



Judith Gregory



A daily activities calendar is one component of the Wellness Experience Research self-awareness toolkit.

“Diabetes is now regarded as a pandemic, an illness that is crossing generations,” says Gregory, who began the first phase of the design research project with 11 families in the predominantly Mexican-American community of Pilsen on the city’s Southwest Side. “My strategy is to think of a neighborhood as a microcosm for change and to see the family as a resource for the circulation of knowledge. Individuals within families span generations and have a variety of social networks—work, educational, virtual, international, spiritual, recreational—thereby providing a cross-sectoral dimension to the spread of wellness information.”

Gregory and her team of ID master’s and doctoral students set out to acquire a deep understanding of these families’ everyday social and cultural experiences and challenges, and formed research relationships with the Chicago Hispanic Health Coalition and the Chicago Community Health Workers Local Network, organizations that have established ties with the city’s Latino population.

Key components of the project are a self-awareness toolkit of hands-on activities introduced to participants in an In-Home Study and participatory workshops held in November 2009 and this past February. The kit includes a calendar, where family members can post their daily activities with colorful stickers; a diabetic diary; a family tree, which allows families to trace incidents of diabetes, obesity, cancer, and heart disease; digital cameras for photo/video documentation of home and social life; and a *Loteria* game, developed for the project by ID doctoral student Yadira Ornelas.

Loteria is a popular game in Mexico and is similar to another game of chance, Bingo, although it features images and symbols related to Mexican culture, history, and traditions instead of numbered squares. “Ranging from common everyday objects to mythological creatures, the symbols encompass Mexicans’ hopes, values, fears, and desires,” says Ornelas, who is supported

by Fondo Nacional para la Cultura y las Artes. “My intent was to design a cultural probe that would evoke memories and emotions in order to get to know the participants on a more personal level. For this connection to happen, I needed to rely on an artifact that was social and culturally inclusive. The basis for the design research probe had to be something familiar to them and simple enough to relate to their daily lives, while at the same time powerful enough to elicit complex responses.”

Ornelas says one participant shared that the cards provided an exercise in “rediscovering herself,” lending promise to Gregory’s microcosm concept for transformational social change as moving from the individual outward. After conducting in-home interviews, the ID team will analyze their findings, giving researchers a way to understand the relevance of social metrics as well as clinical metrics in combating disease.

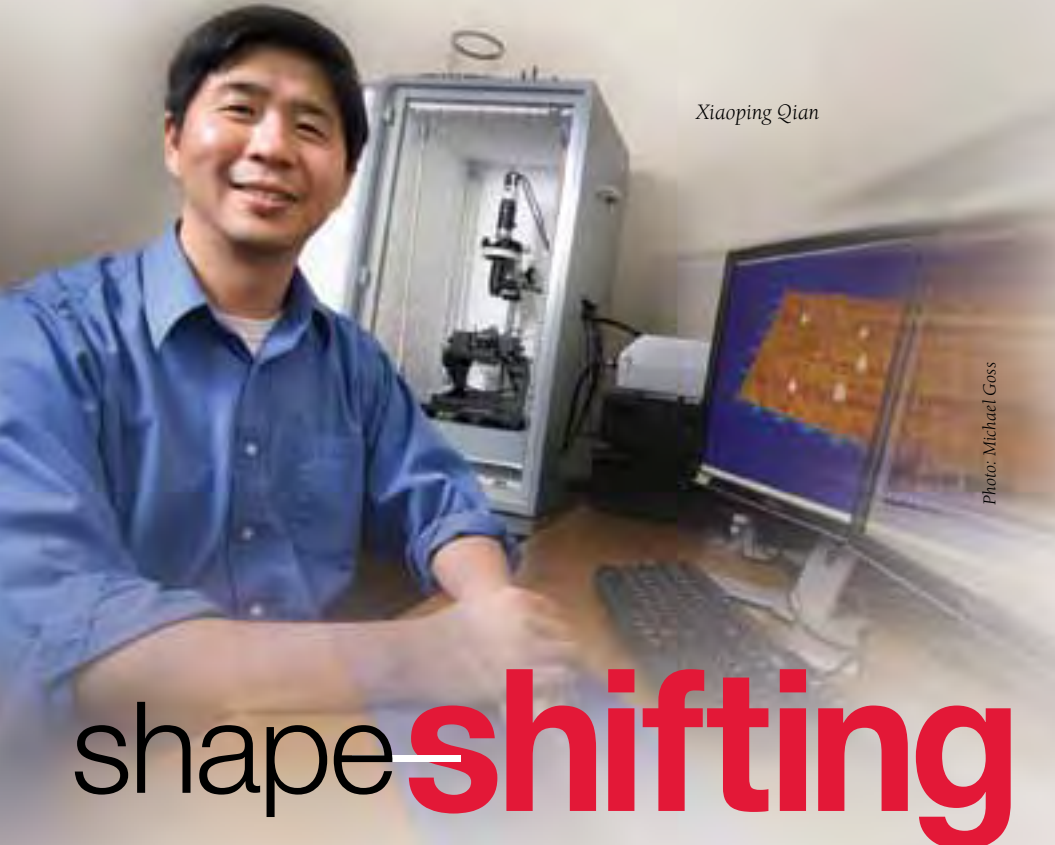
—Marcia Faye

MORE  ONLINE

Wellness Experience Research: Diabetes in Chicago’s Latino Communities: <http://vimeo.com/9585362>

Chicago Hispanic Health Coalition: www.chicagohispanichealthcoalition.org

Chicago Community Health Workers Local Network: <http://ccts5.cstcis.cti.depaul.edu/hco>



Xiaoping Qian

Photo: Michael Goss

shape-shifting

“I’VE ALWAYS BEEN INTERESTED in the shape or geometry of objects,” Xiaoping Qian says, reflecting on his fascination with the mathematical modeling and manipulation of forms.

Qian, assistant professor of mechanical and aerospace engineering, directs IIT’s Computational Design and Manufacturing Laboratory. Established in 2004, the lab develops new technologies for the computer-aided design and fabrication of three-dimensional objects—innovations applicable in diverse industries including aerospace, automotive, nanotechnology, and medical imaging. Qian’s most recent work involves shape information gathered by electronic scanners—devices that record data about a particular three-dimensional object or environment.

Modern 3-D scanners have become ubiquitous in product design and manufacture, allowing for the fabrication of objects requiring very precise measurements. Such scanners often use laser light to precisely map the contours of objects, though other modalities—such as X-ray, as in the case of computed tomography—are also widespread.

All such techniques produce a vast quantity of data, amounting to millions or billions of discrete points that appear as a cloud-like spray when visualized on a computer. This output—known as point cloud data—represents the visible surface of the object that has been scanned or digitized. Working with point cloud data is tricky, but Qian’s group has made significant strides in the mathematical handling of this information.

In manufacturing a complicated product, scan data is typically converted into an intermediate representation before the item can then be machine fabricated. Point clouds themselves are typically not directly usable for 3-D applications, but must first be converted to triangle mesh models, various surface models, or CAD models through a process referred to as reverse engineering.

Qian’s technique skips this middle step, relying on a mathematical principle known as moving least squares, which can define a continuous surface directly from a set of points. Through this approach, objects can be manufactured directly from scan data. For example, a recent project undertaken by then-student Tim Schmidt (AE, ME ’02, M.S. MAE ’09) and doctoral student Pinghai Yang used point cloud scanning data and moving least squares analysis to fabricate a custom-fitted facemask. The mask was designed for military applications where protection from poisonous gas was required, so a perfect, airtight fit was essential.

“Instead of using commercial software, where you have to spend perhaps weeks or even months of an engineer’s time to reconstruct the digital model of the human face,” Qian explains, “we took scanned data and directly sliced it.” These digital thin sections were sent immediately to a reproducing machine, where the parts are made by depositing material layer by layer under computer control. The entire process from scanning to finished object takes minutes rather than weeks.

“We call our approach direct digital design and manufacturing,” Qian notes, adding that the fundamental technique holds promise not only for manufacturing, but also for many other fields that use scanned data. Some of these potential applications are being explored in the lab, including the measurement of complex aerospace components, the investigation of nanoscale structures unveiled by atomic force microscopy, and biological material acquired through CT or MRI imaging.

One project currently underway attempts to precisely measure the separation between faceted lumbar joints—a key variable for patients with spinal pain.

—Richard Harth

MORE ONLINE

Computer-aided design: www.search.com/reference/Computer-aided_design

Computational Design and Manufacturing Laboratory: www.mmae.iit.edu/cadcam

3-D scanners and scanning technology: www.absoluteastronomy.com/topics/3D_scanner

Balancing Act

Assistant Professor of Chemistry Sandra Whaley Bishnoi aims for balance in her lab at IIT. The chemist and nanotechnologist's projects are neither purely theoretical nor immediately practical.

"It's not basic science, where we're studying fundamental elemental particles, and we're also not trying to come up with the next miracle drug," says Bishnoi. "We look for the points where nanotechnology interfaces with biological problems. I like doing work that is going to have some near-term application. Every project we're working on is probably five years away from becoming a product if it was followed through."

For example, last year Bishnoi published an article in the highly regarded nanotechnology journal *Nano Letters* that focused on a new method of stabilizing nanoparticles in biological solutions. Her research involved stabilizing the nanoparticles so they would not fall out of solution, then studying them to see how they interacted with an organism's macrophage system (macrophage cells absorb foreign elements and remove them from the body). The work is not immediately related to cancer research, but it soon will be: the nanoparticles and mapping techniques that her team used could be applied to track cancer cells throughout the body.

Now she's working on another use for the same technology: creating biosensors that can detect proteins present in serum or saliva. The project is funded by the United States Air Force Surgeon General.

Bishnoi also balances her commitment to innovative research with a desire to engage students of all ages. In the last two years, her lab team has included several of the usual suspects—Ph.D.s and master's-level students—but has also involved many undergraduates and even high school teachers and their students. Bishnoi brings in high school teachers, for example, to help with research involving *Daphnia*, tiny crustaceans she uses in her research, including the project that was featured in *Nano Letters*. Then she sends the *Daphnia* back with the teachers to share with their students. One veteran teacher said that the experience made science come alive for her for the first time.

"Before, for her, science was a list of rules," Bishnoi says of the teacher. "Now she has participated in the scientific process, learned how to generate data and how to analyze that data, and then applied it to understanding a system. She's so enthusiastic about teaching, which is exciting for me. It means I can have an impact not just on the students in my classroom or my lab, but on the 20 students in her classroom this year, next year, and all the following years."

In the same way, Bishnoi looks for projects and rewards that will motivate and engage the other researchers that work with her. For undergraduate students, that often means the chance to see their names attached to an article in a peer-reviewed journal. For graduate students, it's the chance to do original research—to explore unknown scientific terrain.

Bishnoi also understands the source of her own motivation.

"My students all leave my lab with an appreciation for what nanotechnology is, for how it's being used in society and for how it's affecting society," she says. "My focus is on getting people into the lab and getting them excited about being scientists."

—Steve Hendershot

MORE ONLINE

Malvern Instruments article about Bishnoi's research: www.azom.com/News.asp?NewsID=20410

Nano Letters website: <http://pubs.acs.org/journal/nalefd>

National Nanotechnology Initiative: www.nano.gov

Proviso Mathematics and Science Academy student Maritza Rodriguez [left] observes Sandra Bishnoi pipetting in her laboratory at IIT.



Photo: Bonnie Robinson

Designer
of His Own

Destiny

By MARCIA FAYE

The military transport ship made a stately entrance into New York Harbor on August 23, 1949, or so it seemed to one young passenger who, along with many other World War II refugees, had traveled more than 4,300 miles across the Atlantic Ocean from Soviet-occupied Lithuania. The ship headed directly to the dock, bypassing Ellis Island by way of a special congressional act. As the young passenger made his way to the exit, the captain plucked him from the crowd, shook his hand, and said, "Young man, you will have a great future in America."

The captain could not have known how propitious a statement he had made to the 23-year-old Valdas Adamkus (CE '61, Hon. Ph.D. '99), who would grow up to hold one of this nation's highest-ranking roles in the Environmental Protection Agency and serve two terms (1998–2003, 2004–09) as president of the homeland he had to leave behind.

"Nobody could predict that all this was going to happen," says the 83-year-old Adamkus, recounting his first flush of freedom. "It probably was my destiny to be given these opportunities." While it may indeed have been his destiny to be on that ship, Adamkus had been bound—and determined—to uphold democracy for his entire life.

It is now February 16, 2010—coincidentally, the 92nd anniversary of Lithuania's declaration of independence—just over seven months since Adamkus concluded his last term as president. He is staying at the west suburban Chicago townhouse of a friend he is visiting from his days at Lithuania's first high school, the Aušra Gymnasium, in Kaunas. Adamkus recalls how, 50 years earlier, another Lithuanian family provided shelter after his family immigrated to the United States.


"We lived at 7200 South May Street—I remember the address even today," says Adamkus of the home of Kazys Grinius, Lithuania's president in 1926, and whose family immigrated to Chicago in 1947. Grinius signed the affidavit of support that allowed Adamkus, his parents, and his two siblings to come to the United States. "They had a very small apartment; my mattress was thrown on the floor," Adamkus says of the Grinius home. "That was my first night sleeping in America."

The son of civil servants, Adamkus was separated from his family during most of his teenage years while he worked as one of three publishers of an underground resistance newspaper. He was able to reunite with his family in 1944 and escape to Germany but returned to Lithuania for a short period to fight the Red Army as part of the National Defence Force. He rejoined his family and lived with them in a displaced persons camp for a total of five years before being given permission to come to the States.

Once in Chicago, Adamkus took a job at an automotive parts factory and became active in the city's growing Lithuanian-American community, where he began to establish his reputation as a unifying leader who worked tirelessly to eliminate Soviet control of the Baltic region. He co-founded a federation of young Lithuanian émigrés, Santara-Šviesa, and broadcast his messages through Voice of America. He also organized protests against the occupation in his homeland and was instrumental in gathering 40,000 signatures in a youth petition calling for the federal government to intervene in the ongoing Soviet deportations of Lithuanians to Siberia. The petition was presented to then-Vice President Richard M. Nixon.

"Those who came here but spent their formative years in Lithuania had the motive to fight," he explains about the commitment to liberation that fueled and forged together his new community in the United States.

After he graduated from IIT (family friend Liutas "Leo" Grinius [EE '53] introduced him to the university), Adamkus was working as a draftsman at an engineering firm when then-Illinois senator Everett Dirksen invited him to work on environmental issues for the federal government. The two years Adamkus thought he would stay turned into a 27-year career capped by his appointment as administrator of EPA Region 5, responsible for all air, water, hazardous waste, and other pollution-control efforts in Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. He served the EPA under six presidents, from Nixon to Bill Clinton, before he left in 1997 to run for the Lithuanian presidency.



*"The principles
of freedom and
human rights
cannot be learned
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you."*





Valdas Adamkus (CE '61, Hon. Ph.D. '99)

One of his proudest moments at the EPA came in 1983 when, under pressure by lobby forces, he refused to alter a report compiled by his team that fingered the pollutant dioxin as a carcinogen and found high levels of the substance in the Great Lakes. The matter received national attention when Adamkus appeared in a congressional hearing on the case, which involved a major chemical company. Adamkus notes that while much work still remains in protecting the environment, during his years with the EPA, Lake Erie was lifted from its “dead lake” status, the level of polychlorinated biphenyls in Waukegan Harbor were reduced, and Chicago’s air pollution levels dropped. In 1985, President Ronald Reagan presented him with the Presidential Distinguished Rank Award of Distinguished Executive for his overall efforts.

But an earlier experience at the EPA ultimately shifted the professional course for which he was destined. In 1972, President Nixon sent him to Moscow to attend an environmental conference as part of an official U.S. delegation. Through this event, Adamkus secured a side trip to Lithuania—his first in almost 30 years—and grew more involved in Lithuanian environmental concerns. By the time the Soviet Union’s control of Lithuania had weakened and was finally broken in 1990, Adamkus had made several return trips to his homeland, where his name and reputation had become widely known. Several political parties asked him to run as a presidential candidate.

After living in the United States for 50 years, Adamkus returned home. During his two terms as president, he achieved one of the highest approval ratings among Lithuanian politicians, and is still recognized as a moral authority.

“He was a great administrator and a very honest man, one whom you trusted,” says Stanley Balzekas Jr., president of the Balzekas Museum of Lithuanian Culture and longtime Chicago businessman. Balzekas met with Adamkus many times over the years and recalls that the former president always made himself available to everyone. “He was a man of the world, bringing great stability to Lithuania and the surrounding regions,” he says. “He wasn’t looking for any personal gain or notoriety.”

By having the opportunity to experience a free society in the United States, Adamkus was able to further unite the people of Lithuania to champion democracy and a better quality of life.

“The principles of freedom and human rights cannot be learned from books; you have to grow up with those ideas so that they become natural and a part of you,” he explains. “My two terms as president were based around those principles. I still try to live by them every day.” ■

Photo: Michael Gross

MORE ONLINE

Valdas Adamkus presidential biography: www.adamkus.lt/en/family/biography.html
Balzekas Museum of Lithuanian Culture: www.balzekasmuseum.org

image

is everything

If a picture paints a thousand words, a CT scan paints 1 million.

In years past, surgeons

would commonly conduct exploratory surgery—visually scouting within the patient to diagnose an ailment that a picture, in this case an X-ray, could not detect. While exploratory surgery still has its place in some applications, today complex ailments and the most life-threatening diseases are assessed with the aid of advanced medical imaging. Medical imaging is also used for basic scientific research, and to guide development and testing of new pharmaceuticals.

In spite of its high level of sophistication, medical imaging continues to improve at a dramatic pace, and IIT's Medical Imaging Research Center is at the cutting edge of these technological innovations.

As Miles Wernick, Motorola Professor and director of MIRC explains, the group focuses on three broad areas of research—creating better images through development of new imaging devices and procedures, improving existing images through new mathematical approaches, and understanding the images that are obtained through the application of advanced computer algorithms. "Something most people don't appreciate," Wernick says, "is that modern medical images are not like photographs." Rather than being captured directly, as images are in a digital camera, medical images (such as MRI) are computed by a complicated mathematical algorithm. "It's in that computation that the image quality is largely defined," he adds.

While many research teams specialize in one imaging modality or concentrate on the diagnosis of one type of disease, MIRC is unique in its breadth of areas explored, drawing on \$6.3 million in recent research grants, mainly from several different components of the National Institutes of Health. In addition to refining existing imaging methods, MIRC investigators are exploring entirely new methods, such as thermoacoustic imaging, as well as sophisticated search engines and computerized analysis techniques for accessing and making sense of medical images.

Although IIT lacks a medical school of its own, MIRC—a branch of IIT's Pritzker Institute of Biomedical Science and Engineering—benefits from close collaborations with the nearby University of Chicago Medical Center and Rush University Medical Center, as well as hospitals and medical schools elsewhere in the United States and in Canada.

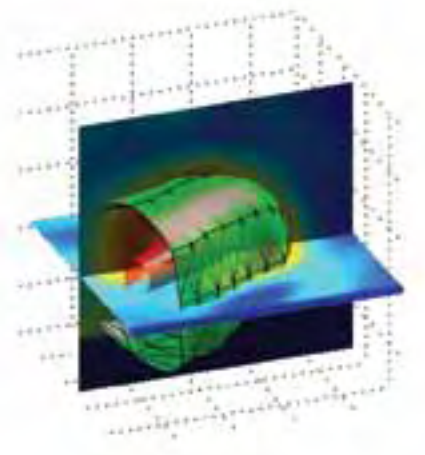
The following are a few of the promising research areas currently under exploration at MIRC.



A computer-simulated tumor created by MIRC for purposes of evaluating imaging methods

A SEARCH ENGINE FOR MAMMOGRAMS

Yongyi Yang (M.S. AMAT '92, Ph.D. EE '94), professor of electrical and computer engineering, is the principal investigator for an NIH-sponsored project to develop an innovative image-retrieval system—a sort of Google for mammography that conducts searches based on images rather than keywords. Given a patient's mammogram, the software fetches and displays several similar mammograms from a vast library of stored images, providing the radiologist with examples of relevant past cases for comparison. "It's like a doctor with a really big brain," Yang says, referring to the search engine's instant recall from tens of thousands of historical records. Should the search engine pull up images closely resembling those of



The human heart in SPECT images used to assess coronary artery disease

the mammogram under consideration, it can inform the physician about past patient outcomes and offer useful hunches as to the benign or malignant nature of irregularities appearing in the patient at hand. The system could greatly enhance the usefulness of mammograms, which are notoriously tricky to interpret, and may also limit unnecessary biopsies and missed cancers. The project will be tested using the University of Chicago's Hospital Information System, a database containing a large number of patient records.

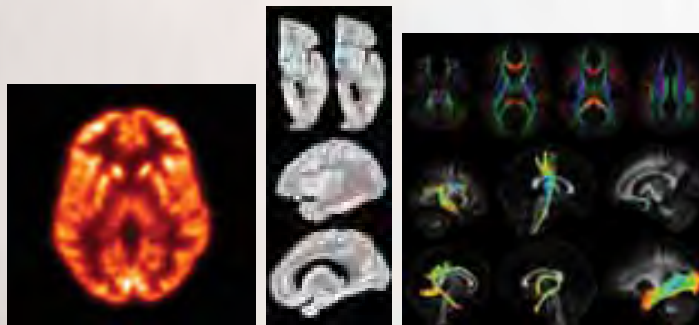
IMAGES ON THE GO

While brain imaging is typically accomplished by big, expensive machines like CT or MRI scanners, simpler, more portable devices are also being explored. Mark Anastasio (EE '92), associate professor of biomedical engineering, along with colleagues at Washington University in St. Louis, is working on thermoacoustic imaging—a new technique that may be applied clinically within the next few years. The hybrid method combines electromagnetic waves with acoustical properties to deliver 3-D images. A short electromagnetic pulse is used to irradiate biological tissue, which absorbs this pulse, causing emission of acoustic signals that can be measured and used in conjunction with a mathematical algorithm to form a 3-D map of the tissue's properties.

One of the significant advantages of thermoacoustic imaging is that it can be achieved using a compact device that can be wheeled into a hospital room, eliminating the need to transport patients to a separate imaging facility. It could also be used in ambulances, on battlefields, or in other remote settings. Further, thermoacoustic

[Left to right]

1. PET image of a brain showing glucose metabolism
2. Image showing regions of iron accumulation (blue) and tissue degeneration (orange/red) in Alzheimer's disease
3. Diffusion tensor imaging (DTI) nerve fibers



imaging provides an attractive alternative to X-ray imaging, replacing harmful ionizing radiation with safe microwave frequencies capable of penetrating the skull. Anastasio is working to perfect the mathematical tools, including image-reconstruction algorithms, needed to produce accurate images from this exotic form of data.

MAPPING THE BRAIN'S SUPERHIGHWAYS

While the term gray matter—referring to concentrations of neuronal cell bodies in the brain—is familiar to most, the brain's white matter is equally important. White-matter nerve fibers are highways of the central nervous system that connect different brain regions and are a focus of research for Konstantinos Arfanakis, BME associate professor. He has created an atlas of white-matter nerve fibers based on an MRI technique called diffusion tensor imaging (DTI). The atlas is now available to the scientific community: to date, more than 30 groups in more than 12 countries around the world are using the IIT atlas.

DTI is able to map neural tracts by measuring the amount of diffusion of water molecules within white-matter tissue. Within

a healthy nerve fiber, water is mainly able to diffuse along the direction of nerve fiber tracts; therefore, by tracing the direction of highest diffusion, one can make a roadmap of the tracts.

When axons have been affected by disease, this diffusion property changes and provides clues to the onset of disease and its nature. Arfanakis is using DTI in a large-scale study of Alzheimer's disease in collaboration with Rush Alzheimer's Disease Center in Chicago to investigate associated microscopic changes in white-matter tissue.

Preliminary findings show that DTI may reveal changes in brain tissue long before a subject is diagnosed with Alzheimer's disease. Early diagnosis of the disease will allow identification of the most appropriate human subjects to participate in tests of new drugs for Alzheimer's patients. Also, early diagnosis of the disease will allow early intervention, which could minimize neuronal damage and associated impairment of mental function. And because conventional DTI techniques yield poor image quality in the brain regions that play a major role in the early stages of Alzheimer's disease, Arfanakis is developing new DTI techniques to improve imaging in these regions.

TOMOGRAPHY: KEY TO MODERN MEDICAL IMAGING

The earliest type of medical imaging—Roentgen's X-ray—formed a shadow picture of the patient's body onto a photographic plate. The X-ray is still widely used, for example, in mammography. However, X-rays are difficult to interpret because the information is mixed together: an abnormality on the skin cannot be distinguished from one deep within the patient. Therefore, most modern methods of medical imaging employ a different approach called tomography, which produces images that appear as virtual slices of the patient's body. By viewing these slices, the physician can precisely locate and characterize abnormalities in relation to normal

structures. Tomography has led to an ever-expanding alphabet soup of imaging methods—including CT, MRI, PET, SPECT—each of which portrays a different property of the body's structure or function. For example, a PET scan shows how rapidly the body is consuming glucose (sugar); thus, PET scans can show the location of tumors, or regions of the brain that become active during specific activities. MRI is like a Swiss Army knife: by changing its computer programming, MRI images can measure many different properties of the body, including blood oxygenation effects that reveal the workings of the brain.

BODY IMAGE

Imaging research at IIT's Medical Imaging Research Center touches all areas of the body.



EYE



Image of the eye taken with a new X-ray setup at IIT

HEAD

MIRC is developing thermoacoustic imaging, a new technique allowing for a highly mobile imaging platform, combining sound and electromagnetic waves to produce a detailed, non-invasive image of the brain.

Diffusion tensor imaging, or DTI, has been applied to the detailed study of the brain's white-matter fiber tracts. By examining differences in water diffusion through neural fibers, researchers hope to dramatically improve early diagnosis of Alzheimer's disease and other degenerative brain ailments.

NECK

Identifying arterial plaques in the carotid artery through phase contrast imaging will help physicians identify plaques and determine which ones are in danger of rupturing.

BREAST

Microcalcifications in breast tissue and other abnormalities suggestive of disease are being examined through MIRC's innovative image retrieval system—a kind of search engine that combs historical patient records, providing physicians with a wealth of diagnostically relevant information.

Phase contrast imaging and multiple-image radiography, two advanced forms of X-ray imaging, are being refined to provide more detailed and useful mammography images.

HEART

MIRC is developing new 4-D and 5-D approaches to imaging with single photon emission computed tomography (SPECT) that use advanced image-processing methods to permit new ways of imaging patients with heart disease.

MIRC is also developing image analysis methods based on CT scans, which identify vulnerable plaques in coronary arteries.

JOINTS, KNEES, ANKLES, WRISTS, ELBOWS, FINGERS, TOES, TENDONS, LIGAMENTS

MIRC investigators are developing techniques of multiple image radiography using three combined images displaying the effects of absorption, refraction, and ultra-small-angle X-ray scattering, providing unprecedented image quality.

PROSTATE

No standard method for imaging prostate cancer currently exists, and existing diagnostic methods are often difficult to interpret. MIRC researchers are exploring the use of multiparametric MRI, hoping to improve algorithms for cancer detection by non-invasive means.

PHASE CONTRAST IMAGING

Phase contrast X-ray imaging is an area in which IIT has high visibility, led by Anastasio, Assistant Professor of Electrical and Computer Engineering Jovan Brankov (M.S. EE '99, Ph.D. '02), and Wernick, under three NIH research grants: two studying mammography and one studying arterial plaques.

Whereas conventional imaging considers X-rays to behave like rays penetrating the body and forming a shadow on an imaging camera, phase contrast imaging views X-rays as waves, like ordinary visible light. "We're treating the X-ray system as an optical system," Anastasio notes. By using wave properties of X-rays, phase contrast techniques, such as the multiple-image radiography (MIR) technique developed at IIT, are able to show cancer and other abnormalities of soft tissue with extraordinary clarity. Furthermore, the MIR technique has technical advantages that may allow mammography to be performed without painful compression of the breast, and with a greatly reduced radiation dose.

PREDICTING THE DIAGNOSTIC PERFORMANCE OF DOCTORS

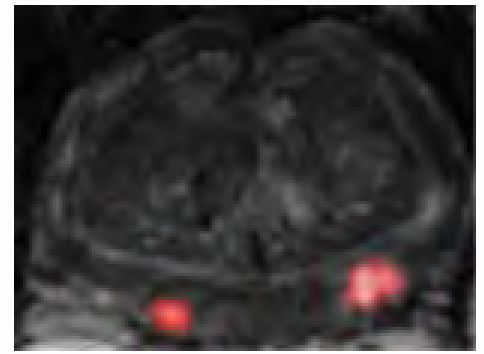
The true measure of a successful imaging technique is whether it enhances doctors' decision-making abilities. When doctors correctly diagnose cancer by using a new type of imaging, the imaging technique is deemed a success. But this raises the question: how can you test the diagnostic performance of doctors? An obvious way is to show doctors hundreds of images, some with cancer and some without, and see whether their diagnoses are correct. Unfortunately, this approach is not very practical, particularly if there is a need to compare many different imaging methods, requiring doctors to examine thousands of images. Under \$2.5 million in grants from the NIH, Brankov is developing a software suite that makes these determinations automatically. The software "learns" to predict physicians' diagnostic performance based on new kinds of medical images from prior data on their performance in similar prior examples. A portion of Brankov's work is already in use at Siemens Medical Systems.

IMAGING AS AN ALTERNATIVE TO BIOPSY IN PROSTATE CANCER

An estimated 200,000 men will be diagnosed with prostate cancer next year, yet there is not an agreed-upon method of imaging for this prevalent disease. Lacking an authoritative imaging tool, doctors must perform uncomfortable biopsy procedures to diagnose the disease. Samil Yetik, ECE assistant professor, is working with the University Health Network, a large health care provider in Canada, to demonstrate a new approach to diagnosing prostate cancer. In this method, several kinds of MRI images are taken during one session, and these are combined using pattern recognition algorithms to produce pictures showing areas of the prostate affected by cancer. This method has provided greater than 95 percent accuracy in preliminary studies, and they are planning a larger clinical study to verify these promising findings.

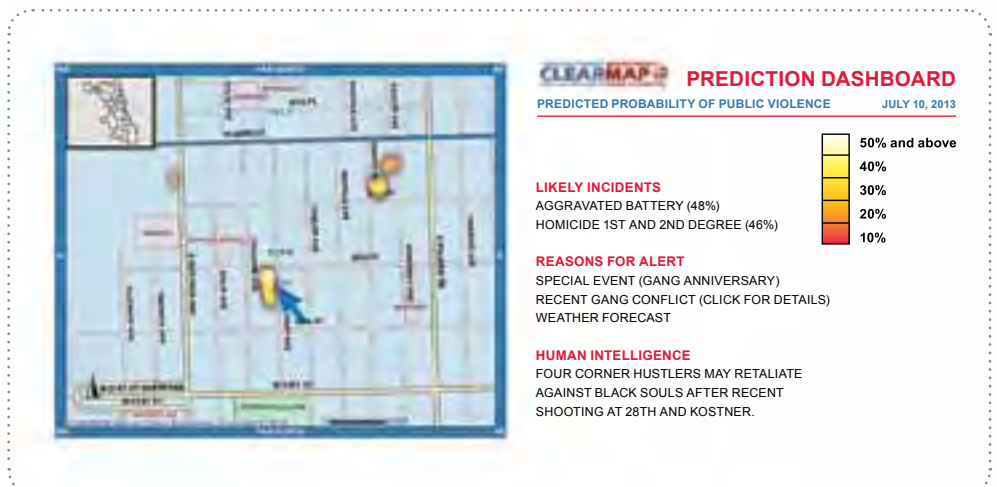
CRIME PREDICTION

Data mining—a strategy for examining large volumes of information in an effort to identify underlying patterns—is at the heart of a collaboration between IIT, the Chicago Police Department, and software giant Oracle. Using the analytical techniques



Slice of a prostate gland showing regions found to be cancerous by one of MIRC's computer algorithms

MIRC researchers have applied to understand medical images, Wernick and colleagues are trolling the police department's vast repository of information—one of the largest databases of any kind in the country. Their goal is to extract from the wealth of existing police data the patterns of activity that will help the police predict future crime. Using such variables as weather forecasts, recent crime incidents, gang activity, concerns raised at town hall meetings, 911 calls, and thousands of other variables, they will produce maps of projected crime patterns resembling those seen in brain imaging, in which hot spots of activity are highlighted. The project is supported in part through a grant from the National Institute of Justice. ■



A mock-up of the display MIRC is creating for the Chicago Police Department; colored blobs are regions where the algorithm expects there will be a likely uptick in crime.

MORE ONLINE

National Cancer Institute site on cancer imaging: <http://imaging.cancer.gov/imaginginformation/cancerimaging>
IIT Medical Imaging Research Center: www.iit.edu/mirc

“A HUG DELIGHTS AND WARMS AND CHARMS; THAT MUST BE WHY GOD GAVE US ARMS,” GOES A CLEVER, ANONYMOUS QUOTATION.

WHAT ABOUT FINS?

by | MARCIA FAYE

As a child, Melissa Shyan-Norwalt (M.S. PSYC '81) was approached by stray dogs and scared horses, and believed even then that members of the kingdom *Animalia* may be more than just creatures of instinct. Now an animal behaviorist, Shyan-Norwalt had a special experience with a bottlenose dolphin later in her life that only strengthened these feelings.

While enjoying her morning coffee at the University of Hawaii at Mānoa, Shyan-Norwalt, then a doctoral student in experimental psychology, heard a high-pitched whistle, much like a teakettle spouting off. She realized it was coming from the dolphin pool and recognized it as a distress call: one of the mammals had somehow toppled out of the water and was lying on the concrete perimeter. Except for a few scratches on its back, the female dolphin appeared to be fine and was hoisted back into its water world. Shyan-Norwalt decided to get into the pool to observe the animal more closely, and got a big surprise.

“She swam up me so that her head was leaning on my left shoulder and her body was pressed against mine,” recalls Shyan-Norwalt. “I held her and petted her, and she held me with her pectoral fins. I could feel her heart rate start to slow down; she wanted to be comforted. In comparative cognitive psychology, we train animals and ask them to do things so that we can learn how they think and what they can do. But I don’t always expect them to have a bond. As people, we develop bonds because we’re sentimental. But animals sometimes show you that they have really developed a bond with you.”

Shyan-Norwalt says that while it has been shown scientifically that animals do have “feelings”—if defined behaviorally or as physiological responses—misconceptions do occur. It is the job of some applied animal behaviorists to ensure that the social signals between animals and humans are correctly interpreted. (After Shyan-Norwalt’s tender moment with the bottlenose, the dolphin reverted back to its species-typical ways by trying to bite her as soon as its confidence returned.)

SHE LISTENS TO THE ANIMALS

MELISSA SHYAN-NORWALT (M.S. PSYC '81)



Photo: Bonnie Robinson

An Animal Behavior Society-certified applied animal behaviorist (CAAB), Shyan-Norwalt is one of only 55 individuals worldwide who hold such a credential. To qualify for certification, CAABs must have advanced degrees in a behavioral science or veterinary medicine, provide case studies for review, publish articles in scientific journals, and have years of hands-on supervisory experience with animals.

Now a psychology professor at Martin University and founder of Companion Animal Problem Solvers, Inc., a private animal-behavior practice operating in Indianapolis, Cincinnati, and Dayton, Ohio, Shyan-Norwalt has vivid memories of pets from an early age. Her parents made sure there was always enough room in her baby carriage to share with “Junior,” the family’s mixed-breed dog.

“At one point, we had four horses, three dogs, two cats, a parrot, a canary, and a Siamese fighting fish,” says Shyan-Norwalt, thinking back to her childhood in semi-rural Lloyd Harbor, a suburb of New York. “By the time I was 12, I knew that I wanted to become a veterinarian.” She instead combined her interests in human cognition with comparative cognitive work and became what some have endearingly described as a “pet shrink.”

While most of her current pet clients come from across Ohio and Indiana, Shyan-Norwalt has traveled to zoos and research facilities as a consultant and helped to design a zoo planned for Korea. Invited to speak at veterinary colleges and national animal welfare and shelter conferences, she has been interviewed for local and national TV shows, magazines, and newspapers.

Tim Staggs, Shyan-Norwalt’s former student at Butler University, assisted her in research on the visual acuity of African elephants, and recalls her as a strong mentor and a visionary. “She taught me how to learn, plain and simple. Before I began working with her, I was a first-generation college student struggling in school and on academic probation,” explains Staggs, now a private-practice attorney. “After meeting her, I graduated *magna cum laude* from both undergraduate and law schools. She was the first teacher who taught me to work with all that ‘potential’ others had been talking about my whole life.”



Shyan-Norwalt describes herself as a “debunker” who likes to test commonly held assumptions about animals. She is compiling data based on her own observations; for example, do dolphins prefer very large pools? (For at least one zoo group, no.) Are African elephants poor visual users? (Actually, they’re pretty good.) Her current research focuses on animal welfare and psychological enrichment for domestic, exotic, and companion animals in zoos and research facilities, trying to determine whether untested assumptions about what is considered enriching for a given species is truly so. She also continues to explore and study new problem-solving strategies for pet behavior issues.

“I’m always looking for ways that animals can ‘tell us,’ behaviorally, what they can perceive, conceive, comprehend, and problem-solve,” says Shyan-Norwalt.

She offers a number of educational presentations, including one for pet owners and caregivers interested in how to interpret dog and cat facial expressions, body language, and other communication signals. Based on scientific research, the talk exposes the myths and discusses the realities of dominance in the dog, cat, and human species. Shyan-Norwalt says, for example, with almost every mammal a stare is considered a form of challenge, but one with a fairly big twist.

“If it’s done within species, it could mean, ‘I want to dominate you,’ she says. “If it’s across species, it could mean, ‘I want to eat you.’” ■

TEACHING PETS

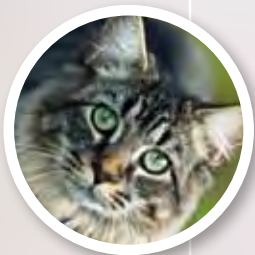
For several years, Melissa Shyan-Norwalt was a scientist with Iams Company, a manufacturer of premium dog and cat foods, and worked on behavior-modification programs for dogs and cats with adjustment problems. Though she has seen exceptions to the rule, Shyan-Norwalt says that behaviorists use three key principles to positively alter almost any animal’s unattractive habits.

“We find a good reinforcer, like food or petting,” she says, “then maximize how the animal understands what is being asked of it—what stimuli it is able to recognize and what mediating cues are needed to teach it the task. Finally, we take baby steps. They are needed to break down the desired behaviors into manageable units that can bring the animal to do what we want, whether that is pressing a lever or not attacking another dog on a walk.”

MORE  ONLINE

Animal Behavior Society: www.animalbehavior.org

Companion Animal Problem Solvers, Inc.: <http://home.earthlink.net/~companion-animal-problem-solvers>





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We want to hear from you! Send us your class note at alumni@iit.edu.

classnotes

1940s

→ **Jerome Klipp** (ME '43), Carlsbad, Calif., has spent his recent years as a consultant in construction defects. A Licensed Professional Engineer in California, Klipp has been licensed in more than 20 states and in Israel.

→ **Ralph Arboe** (ME '44), Hot Springs Village, Ark., turned 87 in December 2009. During his career, Arboe won contracts for the Minuteman Missile, got Purdue University's two-year engineering programs accredited for a four-year program, and started his own business, OEM Industries, Inc. He has two grown children, as well as grandchildren and great-grandchildren. Arboe enjoys swimming and working in his yard.

1950s

→ **Harold Rechter** (CHE '50), Scottsdale, Ariz., retired from the Chicago Fire Brick Company as vice president and director of research. He and his wife, Linda, like to hike in the desert areas near Scottsdale.

→ **Toru Bill Ogasawara** (EE '51), Seattle, retired from The Boeing Company, Commercial Airplanes Division, after 30 years of service. In retirement, Ogasawara plays pickleball and billiards, and is in his 17th year as a volunteer organist at a local nursing home.

→ **John R. Wettroth** (BE '51), Arlington, Va., retired after 30 years of service with the United States Navy. He has four grown children, is a member of the Kiwanis Club, and enjoys sailing.

→ **Charles Stade** (CHE '52), Oak Park, Ill., worked in computer science until his retirement. He is interested in photography, traveling, and writing scholarly papers.

Joyce Foster (ME '53, M.S. '59), Huntsville, Ala., recently retired as an aerospace engineer. He served for 32 years with NASA's Marshall Space Flight Center, six years supporting the Canadian Space Agency, and 15 years as an aerospace consultant. Foster worked closely with Wernher von Braun from the mid-1950s to the mid-1970s and more recently, worked on projects for the International Space Station.

→ **Donald I. Hoke** (CHEM '53), Chagrin Falls, Ohio, is retired from the Lubrizol Corporation. He has two sons and four grandchildren.

→ **Kenneth Mendelson** (PHYS '55), Milwaukee, Wis., retired from Marquette University as a professor emeritus of physics. He remains involved with the American Physical Society and the American Association of Physics Teachers.

Nicholas Raimondi (CE '55), Chicago, is a retired civil engineer. He was the president of National Survey Service, Inc., a professional land surveying firm operating in Illinois and its surrounding states. Raimondi has two sons who are both registered land surveyors, continuing the work of the firm. He and his wife, Estelle, enjoy their four grandchildren.

Donald Novotny (EE '56, M.S. '57), Madison, Wis., professor emeritus at the University of Wisconsin-Madison, received the 2009 Nikola Tesla Award from the Institute of Electrical and Electronics Engineers. He recently completed his 50th year of teaching.

→ **James Dayton** (EE '59), Cleveland, is a co-owner and chief technology officer of Teraphysics Corp. He and his wife, Carol, are empty nesters.

James Lemke (PHYS '59), La Jolla, Calif., is founder of Achates Power, a clean-tech startup that has raised \$12.1 million in venture capital to develop a cleaner, more efficient automotive engine. Lemke is an adjunct professor of electrical and computer engineering at the University of California, San Diego.

1960s

→ **Phillip I. Rosenberg** (EE '60), Highwood, Ill., is a principal with Newmark Knight Frank Epic. He has two grown children, is an avid tennis player, and enjoys traveling to Aspen, Colo.

→ **Arthur G. Salzman** (M.S. ARCH '60), Evanston, Ill., retired as a consulting architect in December 2007. He has been singing and performing as a serious amateur since 1973.

→ **Lauren Arthur Barry** (EE '61), Seattle, is retired from The Boeing Company, Commercial Airplanes Division. He and his wife have six children and enjoy hiking, biking, and traveling worldwide.

→ **Norman Lemley** (FPSE '61), Arlington, Va., is a maritime safety and security consultant. He has served on government delegations to the United Nations International Maritime Organization and with the United States Coast Guard for 36 years, retiring both as a civilian (member of the Senior Executive Service) and as a military member (captain, USCG Reserve). Lemley and his wife, Laura (DSGN '62), have two grown children.

Mark Peiser (DSGN '62), Penland, N.C., was one of six individuals to receive the 2009 North Carolina Award. The state's highest honor, the award recognizes contributions made in fine arts, literature, public service, and science. Peiser is a glass artist whose works are in collections in institutions such as the Art Institute of Chicago, the Smithsonian's National Museum of American History, the Lucerne Museum of Art, and the Tokyo Museum of Modern Art.

→ **Joseph Leonardi** (EE '63), Coto de Caza, Calif., has been a sales director responsible for carrier, agent, government, and education sales at Time Warner Cable Business Class since December 2008. He and his wife, Martha, have two children, ages 22 and 19.

→ **Morton Rosen** (IE '63), Chicago, retired and sold his business, Polyfoam Packers, in 2002. He and his wife of 46 years, Leora, have two sons, ages 41 and 38. Rosen volunteers in various nonprofit and business advisory situations.

Charles Goldstein (ME '64), Sumter, N.C., is retired after a 45-year career in engineering and management. He and his wife of 47 years, Susan, have three children and five grandchildren.

Alan Kawitt (LAW '65), Chicago, received his United States Coast Guard license as a captain master of the U.S. Merchant Marine in summer 2009. Kawitt practices maritime law.

→ **Donald J. Kerlin** (FPSE '65), Alexandria, Va., is chief of the Program Management Branch, Office of Auxiliary and Boating Safety, in the United States Coast Guard Headquarters, Washington, D.C. He and his wife, Marcella, have four children and six grandchildren.

→ **Charles L. Lipkin** (ME '65), Naperville, Ill., retired as chief engineer and owner of CL Consulting Engineering in 2007, and also after serving in many engineering and management positions with Andrew Corporation. He enjoys model building, choral singing, bicycle riding, and traveling with his wife, Barbara.

→ **Roger B. Hirsch** (ME '66), Evanston, Ill., is president of Unitrol Electronics, Inc., where he has been involved in developing and producing electronic systems for the control of resistance welding machines. Hirsch is a professional jazz pianist and also restores antique clocks in his spare time. He and his wife, Carol, have three grown children and eight grandchildren.

→ **Michael M. King** (CHEM '66), Washington, D.C., is chair of the Department of Chemistry at George Washington University. He is a leader in his Advisory Neighborhood Watch program and on the board of directors of the George Washington Hillel. He and his wife have one child, age 22.

→ **Mike Mickley** (CHE '66), Boulder, Colo., is principal technologist with Mickley & Associates. He and his wife, Pam Lambert, have two children and two grandchildren. Mickley's interests include playing jazz trombone and studying new science and alternative-medicine practices.

→ **Claude Flandro** (CHE '67), Sagamore Hills, Ohio, is vice president of direct sales for ControlSoft, Inc. He and his wife, Carol, are easing into retirement in the Cleveland area.

→ **William Velon** (CE '67), Orland Park, Ill., is semi-retired and is a private investor. He has a son and a daughter, and is active in his local church.

→ **Jerome Zis**

(M.S. EE '67), Saratoga, Calif., retired from Analog Devices as product line director for amplifiers. He enjoys being with his grandchildren, traveling, playing in local bands, and repairing woodwind instruments.

→ **Charles Herckis**

(CE '68, M.P.A. '94, M.P.W. '97), Oak Park, Ill., has been working on cutting into a major gas transmission line to install a new crossing under the Rio Grande River in Santa Cruz, Bolivia. At the 2009 American Society of Civil Engineers Pipeline Conference, Herckis presented a paper about cutting into and redirecting the flow of a 90-inch water line to allow for construction of a new runway at O'Hare International Airport.

→ **Merrill Hoyt**

(LAW '68), Chicago, is currently a sole practitioner. He is president of Friedman Place, a residence for adults who are visually impaired, and president of Counseling Center of Lake View. Hoyt is married and has three children.

→ **William Jarosz**

(MATH '68), Boston, retired from Fidelity Investments, where he was vice president of systems architecture. He now enjoys composing, performing, and listening to music.

→ **Dennis Lyzniak**

(CE '68), Miami Lakes, Fla., retired from Parsons Corporation as vice president of transportation. He currently volunteers with the Boy Scouts of America. Lyzniak and his wife, Clara, have four children and enjoy volunteering and managing the Community Theatre of Miami Lakes.

→ **Tom McMurchie**

(MATH '68), Sammamish, Wash., is engineering manager and chief system architect for Strobe Data, Inc. He and his wife, Carol, have four daughters, ages 40, 27, and 16-year-old twins. McMurchie is the inventor of the board game Turo, and enjoys mountain hiking and trail running.

→ **Unmeel Mehta**

(M.S. MAE '68, Ph.D. '72), Los Altos, Calif., is division scientist at NASA Ames Research Center. For most of his career, Mehta has worked on computational fluid dynamics and space transportation. He has two children, ages 26 and 24.

→ **Zuhair Suidan**

(MAE '68, M.B.A. '70), New Canaan, Conn., founded Suidan Associates consultancy after retiring from IBM. He and his wife, Jean, have four grown children.

William Dorner

(EE '69), Mount Prospect, Ill., is managing director and chief executive officer of Dorner Associates, Inc., an industrial inkjet-printing specialty company providing services worldwide.

→ **Paul Gartz**

(EE '69), Seattle, travels widely as an Institute of Electrical and Electronics Engineers Distinguished Lecturer, speaking on systems engineering for twenty-first century business development and trans-national systems-of-systems. Gartz has two children, ages 29 and 27, and enjoys travel/cultures, boating, and sports.

→ **Henry Hyman**

(M.S. SOCT '69), Pismo Beach, Calif., retired from a career in writing, radio, and television, and is currently curator of the National Cigar History Museum. His wife, Marilee (M.S. SOCT '69), also retired as the chief financial officer of a publishing company, and is now active in city and county politics. The Hymans have two grown children.

Bernard Paul

(LAW '69), DeKalb, Ill., has represented municipalities for 40 years. He has authored chapters on local government topics published by the Illinois Institute for Continuing Legal Education and has also chaired the Illinois Municipal League's Home Rule Attorneys Committee. Paul is married and has four children, three who are in college and one who is an IIT Chicago-Kent College of Law graduate.



CHERYL HYMAN APPOINTED CITY COLLEGES OF CHICAGO CHANCELLOR

Cheryl Hyman (CS '96), who served as vice president of operations strategy and business intelligence at ComEd, was appointed chancellor of City Colleges of Chicago on April 1.

Hyman's path to overseeing a \$476 million per year education system with 5,700 employees is an inspirational one, especially to people who may feel that there is no way out of their present circumstances. When she was 17, Hyman dropped out of Orr High School and left the Chicago home she shared with her drug-addicted parents. Over time, she charted a new course for her life, obtaining degrees from IIT, North

Park University, Oliver-Harvey College, and Northwestern University's Kellogg Graduate School of Management. Hyman joined ComEd in 1996 and held positions in a variety of departments there before becoming a vice president.

While at ComEd, Hyman was active in the Exelon African American Members Association and was instrumental in ComEd's corporate sponsorship of the Black Star Project, an organization committed to improving the quality of life in black and Latino communities of Chicago and nationwide by eliminating the racial academic-achievement gap. Hyman also serves as chair of the project's advisory board and was elected to the board of directors of The Night Ministry, dedicated to helping homeless and runaway youth. She has been sworn in under the State of Illinois as a court-appointed special advocate for abused and neglected children who are wards of the juvenile court system.

1970s

→ **Robert Borowski**

(CHEM '70), Bethesda, Md., is a principal analyst for Analytic Services, Inc. He is also a retired United States Army officer.

→ **Donald Lelonis**

(MET '70), Strongsville, Ohio, retired from Advanced Ceramics Corporation after more than 30 years of service. He has four children and 14 grandchildren.

→ **Eugene Polley**

(ES '70), San Diego, runs his own tax- and business-consulting practice and coaches the Little League team of his 11-year-old son, Aaron.

→ **Stuart Zwang**

(CHE '70), Highland Park, Ill., is a principal with the First Inspection Network and manager of Home Raters, Inc. A National Collegiate Athletic Association soccer referee, Zwang and his wife, Lorri, have two children, Nicholas and Rebecca.

→ **Balfour Donald**

(CHEM '71), Costa Mesa, Calif., retired from American Airlines as a captain. He enjoys photography and woodworking.

→ **Laura Fanning**

(DSGN '71), Little Rock, Ark., retired in 2008 and is creating art, volunteering in animal rescue, and enjoying life with her husband and 2-year-old granddaughter.

→ **Larry Hoeksema**

(ARCH '71), San Diego, is a principal with Architects Mosher Drew Watson Ferguson and currently serves as president of the San Diego Architectural Foundation. He and his wife, Karen, enjoy running and hiking along the Southern California coast. They have four children and several grandchildren.

→ **William Maguire**

(M.S. DSGN '72), Homestead, Fla., is a professor of art and art history at Florida International University.

→ **Ramsis Sarofim**

(M.S. CE '72, Ph.D. '76), Lisle, Ill., has worked at major companies in Chicago and has provided consultations overseas in the areas of power plants (nuclear, hydro, and fossil), transmission lines and substations, bridges, and petrochemicals. He has written technical papers on structural engineering published in major international conferences in the United States, Canada, France, Japan, Italy, Sweden, and China. Sarofim has three children.

→ **Stephen Barlow**

(FPSE '73), Cherry Hills, Colo., is a partner with Lockton Companies. He is married and has two children, ages 16 and 14.

→ **Robert Roth**

(DSGN '73), Seattle, works at the University of Washington developing programs to encourage deaf and hard-of-hearing students to enter the field of computing. He and his partner, John, enjoy boating on Puget Sound.

Jon Knudson

(LAW '74), Vashon, Wash., and his wife, Korina, recently celebrated the third birthday of their son, Jon Kenneth Knudson, named for his cousin, Ken Knudson, who died in a plane tragedy near Palwaukee, Ill., in January 2006. Knudson practices law on Vashon Island and races sailboats.

Jim Lavine

(LAW '74), Houston, is president-elect of the National Association of Criminal Defense Lawyers and a partner in the firm of Zimmerman, Lavine, Zimmerman & Sampson, PC. In 2007, Lavine received the Robert C. Heeny Memorial Award, NACDL's most prestigious honor, given annually to the one criminal defense lawyer who best exemplifies the goals and values of the association and the legal profession.

→ **Margo Tuite**

(M.S. PSYC '74, Ph.D.'81), Chicago, retired from the City of Chicago Department of Public Health as a clinical psychologist.

→ **Rich Adamczewski**

(M.S. IE '75), Oak Park, Ill., is a senior systems analyst for Loyola University Health System. He and his wife, Doris, and their three grown children enjoy attending concerts and the opera, and have been enjoying the United States while traveling in a pop-up camper for nearly 20 years. Adamczewski and his wife have also participated in many volunteer opportunities.

→ **Michael Cerino**

(EG '75), Alexandria, Va., heads the Explosive Ordnance Disposal Technology Department of L-3 Communications. He and his wife, Nicole, have two girls, ages 13 and 10.

→ **Robert Zagar**

(M.S. PSYC '75), Chicago, is chief executive officer of Dr. Robert John Zagar, PC and Zagar Safety Group, Inc. He and his wife volunteer in Chicago's Polish community and enjoy traveling overseas to visit family and friends.

→ **Kent Brooten**

(EE '76), Kent, Wash., is national sales manager for Crane Interpoint. He and his wife, Cheryl, have been married for 35 years and have three grown children. Brooten has been a Scoutmaster for the past 33 years, and is an ultramarathon runner, a mountain climber, and a woodworker.

→ **Margaret O'Mara Frossard**

(LAW '76), Chicago, is a justice with the Illinois Appellate Court. She enjoys teaching and volunteering in the Chicago area.

→ **Terry Bowie**

(MGT '77), Silver Spring, Md., is the deputy chief financial officer with NASA. He and his wife have two children. Bowie enjoys golf, drag racing the 1966 Mustang he built, and volunteering with the Boy Scouts.

→ **Steven G. Cheehy**

(MAE '77), Woodbridge, Va., is an associate principal with AECOM. He and his wife, Debbie, have four children.

→ **Bruce Lanyon**

(ARCH '77), San Francisco, is the director of Project Management Services at The Presidio Trust. In his spare time, Lanyon practices Anusara yoga and participates in an occasional triathlon.

→ **Robert Heller**

(Ph.D. PSYC '78), Lincolnwood, Ill., after more than 20 years in private practice, re-entered the academic world by joining Adler School of Professional Psychology as core faculty and program director of its newly developed school counseling program.

→ **William Hoff**

(PHYS '78), Golden, Colo., is an associate professor in the Engineering Division at the Colorado School of Mines. He is married and has two sons, ages 20 and 18.

→ **Dilip Rao**

(M.S. MAE '78), San Jose, Calif., is a supervisor and advisory engineer in nuclear analysis at AREVA. He enjoys music and travel.

→ **Elena Sheehan**

(M.S. PHOT '78), San Francisco, has retired from teaching photography but continues to make photographic art. She recently was artist-in-residence at the Skopelos Foundation for the Arts in Greece. Sheehan has three granddaughters.

Jeffrey Warnick

(LAW '78), Arlington Heights, Ill., is an associate judge of the Cook County Circuit Court. Warnick was previously with Prusik, Selby, Daley & Kezelis, PC.

→ **Richard Lysakowski**

(CHEM '79), Medford, Mass., began his own trade organization, the Collaborative Electronic Notebook Systems Association. He is interested in entrepreneurship and options trading.

1980s

→ **Robert Eaker**

(FPSE '80), Renton, Wash., is a corporate fire protection and safety engineer with The Boeing Company. He has lived in the Seattle area for 22 years and enjoys family, golf, and fishing.

→ **Edward Koizumi**

(DSGN '80), Oak Park, Ill., is a model, props, and special effects maker. He also mentors students through IIT Institute of Design workshops. Koizumi and his wife, Carol, are restoring their old house in west suburban Oak Park.

→ **Bala Mathiprakasam**

(Ph.D. MAE '80), Leawood, Kan., retired as principal research scientist with Midwest Research Institute, where he researched human body-cooling technologies. He and his wife, Pavalamani, enjoy traveling to Europe and Asia.

Sherita Ceasar

(ME '81, M.S. '84), Philadelphia, has been awarded a place in *CableFAX* magazine's "2009 Most Influential Minorities in Cable: The Second 50," an annual survey of cable's diverse power brokers and inspirational leaders.

Shimon Dick

(M.S. EE '81), Buffalo Grove, Ill., has been promoted to general manager of Motorola Israel from his role as director of Israel Markets Operation. Dick will also assume the presidency upon his predecessor's full retirement.

Richard Hayes

(ARCH '81), Chicago, joined Risinger + Associates as vice president in October 2009. Hayes came to Risinger + Associates from pb2 Architecture & Engineering, where he was vice president of architecture.

Brian Hoekstra

(PHYS '81), Scottsdale, Ariz., is chief executive officer and member of the board of directors of IA Global, Inc., a business process outsourcing and financial services corporation.

→ **Chuck Manchen**

(CS '81), Phoenix, Ariz., is a senior analyst with CVS/Caremark. He and his wife, Pam, have two sons.

→ **Anne Burman**

(LAW '82), Anchorage, is chief legal advisor to the Alaska District Corps of Engineers for regulatory and civil works. She enjoys photography, snowshoeing, and hiking.

→ **Kenneth Burns**

(CHE '82), Thornton, Colo., is a financial advisor at Morgan Stanley Smith Barney. He and his wife, Cynthia York, work side-by-side as financial advisors and enjoy every minute of it. They are both very active with community activities and dote on their nieces and nephews.

Thomas Cloonan

(EE '82), Lisle, Ill., chief strategy officer with the ARRIS Group, Inc., has been named a fellow of the Institute of Electrical and Electronics Engineers.

→ **Jeff Hulett**

(EE '82), Encinitas, Calif., is founder and chief technology officer of Vektrex Electronic Systems, a company providing reliability systems for LED manufacturers. He and his wife, Melissa, live in a restored 1948 beach cottage, run marathons together, and travel often to visit Vektrex clients in Europe and Asia.

→ **Chris Winston**

(ME '82), Pittsburgh, serves as project manager/business analyst on various Maximo® implementation projects at Projetech. He and his wife, Mary, have two children, ages 12 and 8.

John Neuenschwander

(LAW '83), Kenosha, Wis., is the municipal judge for the City of Kenosha. Until his retirement last year, he also served as a professor of history at Carthage College. His book *A Guide to Oral History and the Law* was published by Oxford University Press in 2009.

→ **Larry Sills**

(LAW '83), Solon, Ohio, is a senior vice president and portfolio manager with Wells Fargo Advisors in the Cleveland area. He and his wife, Janet, have three children and one grandchild.

→ **Kong-Chung Wang**

(M.A.S. CHE '83), Cupertino, Calif., is chief operating officer with Chemists Without Borders. He is enjoying a second career in the nonprofit sector after 20 years in the high-tech industry.

Demetrios Kottaras

(LAW '84), Oak Lawn, Ill., is an associate judge of the Cook County Circuit Court. Prior to this appointment, Kottaras was a circuit judge assigned to the Child Protection Division.

Demitris Kouris

(M.S. CE '84), Fort Worth, Texas, is dean of the College of Science and Engineering at Texas Christian University. Before coming to TCU, Kouris was on the faculty of Arizona State University and the University of Wyoming, where he also headed the Department of Mechanical Engineering. Kouris is a fellow of the American Society of Mechanical Engineers.

→ **Tanya Solov**

(BA '84, LAW '89), Chicago, is director of the Illinois Secretary of State's Securities Department.

See What's New Through Velocity

The Velocity Initiative is revealing new and exciting information about your fellow classmates. In this and future issues of *IIT Magazine*, all alumni class notes that resulted from a Velocity interview are marked with the → icon. To submit your own class note online, visit www.iit.edu/alumni or write to us at alumni@iit.edu.



Sara Beardsley (ARCH '02)

EYES ON THE HORIZON

GROWING UP SOME 15 MILES from downtown Chicago in west suburban La Grange, Ill., Sara Beardsley (ARCH '02) found her gaze continually drawn to the city's famous skyline. Years later, she is leading a team responsible for reshaping one of the skyline's most prominent landmarks. While its name change from Sears Tower to Willis Tower made local and national news in 2009, the tallest building in the Western Hemisphere is now undergoing a quieter revolution—it's going green.

Beardsley, project architect for the proposed \$300 million renovation, says that just about every major system—from the windows to the elevators to the plumbing—in the 37-year-old Chicago commercial icon will be brought up to speed for these sustainable times. What's more, the project will showcase how to effectively retrofit other skyscrapers.

"There's so much potential in existing buildings," says Beardsley, who serves as a senior architect at Chicago-based Adrian Smith + Gordon Gill Architecture, the firm heading the project. "It's almost like having a well of energy."

Mehdi Jalayerian, senior vice president and managing principal of the International and Special Projects Division of Environmental Systems Design, Inc., the company contracted to reposition the mechanical, electrical, and plumbing

systems in Willis Tower, notes that across the United States existing buildings account for 40 percent of energy needs while new buildings require only 1 percent.

"The Willis Tower greening and sustainability efforts will serve as an education tool for the rest of the buildings across the world," says Jalayerian, who is also an adjunct research professor in the Ph.D. program at IIT College of Architecture. By the time Willis Tower's major greening efforts are expected to be complete in 2016, a savings of 80 percent of the annual base building energy usage will be realized.

Willis Tower has made advances over the past two decades in reducing its annual electricity consumption and water usage, and improving its lighting efficiency, but the current project is considered to be the most significant sustainable modernization project of an existing building ever undertaken. The building's owners decided to reduce the tower's carbon footprint even further after performing a feasibility study with Beardsley and other AS + GG members, whom they approached about

designing a high-performance hotel next to Willis Tower. The firm signed on to do the hotel but asked the owners to first consider greening the tower as a way to meet the new hotel's energy needs.

According to Beardsley, a feasibility study done on Willis Tower helped to determine which green ideas would reap the greatest benefits for both design projects, and it showed that the savings potential on the existing tower could make a much larger impact in terms of reducing carbon emissions than even the highest-efficiency new building. The goal of both projects is to illustrate how sustainable technology can be best used in an existing building and a new building.

"Reducing the energy demands of Willis Tower would be equivalent to powering the hotel many times over," says Beardsley. "Once the greening project is complete, the hotel and tower are going to take less energy together than Willis Tower takes today."

Some renewable strategies—wind turbines, solar panels, and a green roof at 1,100 feet—are being tested as part of the project, says Beardsley, who joined AS + GG for its emphasis on energy-efficient and sustainable architecture.

— Marcia Faye

MORE ONLINE

AS + GG Architecture: www.smithgill.com

Willis Tower Project: www.willistower.com/icon

Beverly Berneman

(LAW '85), Northbrook, Ill., was admitted to practice by the United States Supreme Court in Washington, D.C. She is the chair of Querrey & Harrow's Intellectual Property Practice Group in their Chicago office. Berneman also practices bankruptcy law.

→ Daniel Huang

(Ph.D. CHE '85), Palo Alto, Calif., is a fellow at Novartis. He and his wife, Daphne, have three daughters.

→ Yvonne (Gnatowski Swan) English

(M.S. CS '86), Dana Point, Calif., is a landscape architect and principal of her firm, Legends Design Studio, Inc. She and her husband, Ken, enjoy sketching, and sailing and swimming in southern California.

→ Mostafa Analoui

(M.S. EE '87), New York, is the head of Healthcare and Life Science Investment at The Livingston Group, where he works in global investment and global innovation and health technology initiatives. He enjoys spending time with his family.

Gregg Deeb

(MAE '87), Corpus Christi, Texas, has been promoted from operations manager to vice president of manufacturing and rig sustainment at Orion Drilling Company, and is responsible for all facets of new rig design and existing rig modification upgrades. Before joining Orion, he was on active duty in the United States Marine Corps for 20 years, retiring as a lieutenant colonel.

→ Nile W. Gossett

(BA '87), Oak Park, Ill., is president and chief executive officer of Best Practices Training, Inc. He enjoys spending time with his family, going to sports games with friends, volunteering, working with young people, and going to the gym.

→ Nisha Kumar

(LAW '87), Washington, D.C., is a senior attorney-advisor with the United States Department of Energy. She enjoys traveling, reading, and practicing yoga. Kumar has two children, ages 16 and 14.

→ Napoleon Garcia

(EE '88), Orlando, Fla., is technology manager of the Rosen College of Hospitality Management at the University of Central Florida. He and his wife, Bernadette, enjoy going on cruises and revisiting the Chicago area. They have two children, ages 20 and 15.

William Griffin

(LAW '88), Glencoe, Ill., is senior vice president and Midwest public affairs practice leader for Hill & Knowlton. Griffin served as press secretary and chief of staff for former Chicago mayor Jane Byrne. In 1981, he formed his own public affairs firm, Brady Griffin, Inc. After earning his law degree, he became a law partner in the firm of Lison & Griffin, PC.

Leonard Greer

(BA '89), Glen Rock, N.J., is senior vice president for marketing for CVS/Caremark's pharmacy benefit management business. Prior to joining CVS/Caremark, Greer held an executive-level position at ActiveHealth and several senior marketing roles at Medco Health.

Donald Tegeler

(LAW '89), Geneva, Ill., is a solo practitioner in Geneva.

1990s

→ Tim McCarthy

(BA '90), San Diego, settled in southern California after serving in the United States Marine Corps. He currently owns his own consulting company and is always looking for new entrepreneurial opportunities. McCarthy enjoys playing golf, coaching his daughter's basketball team, and working out.

→ Jean-Pierre Ruiz

(LAW '90), Bellevue, Wash., is managing partner of EcoStar Law, PLLC, a boutique law firm specializing in providing legal services to small businesses and nonprofit organizations, as well as representing the interests of people who take care of companion animals. In his spare time, Ruiz reads, is learning to play the guitar, and bicycles.

David Marx

(Ph.D. PHYS '91), Normal, Ill., received tenure and was advanced to associate professor of physics at Illinois State University.

Montel Gayles

(LAW '92), Chicago, joined the Chicago office of Hinshaw & Culbertson as a partner in the firm's litigation practice in October 2009. He previously served as chief procurement officer for the City of Chicago.

→ Stanley Hill

(LAW '92), Holden, Mass., is the owner of IP Law, LLC.

→ John Sevic

(M.S. EE '92), Los Gatos, Calif., markets wireless semiconductors and often travels to China. He is on the Editorial Review Board for the Institute of Electrical and Electronics Engineers Microwave Theory and Techniques Society. Sevic has a 6-year-old daughter and is a member of the Los Gatos Bicycling Club.

Mark Brown

(LAW '93), Highland Park, Ill., recently obtained a \$1.2 million verdict from a Cook County jury in a medical malpractice case involving the "lost chance" to provide life-saving medical treatment to a 44-year-old woman who died from a subarachnoid hemorrhage.

Gawain Charlton-Perrin

(LAW '93), Hinsdale, Ill., works in the lawyers' risk management program at CNA insurance company.

→ Daniel T. Brown

(LAW '94), Alexandria, Va., is a partner in the Washington, D.C., office of LeClairRyan. He and his wife, Kathy, enjoy traveling with their children, ages 12 and 9.

Anurag Gupta

(M.B.A. '94), Carmel, Ind., is president of Brightpoint Europe, Middle East, and Africa. Prior to his new role, he was senior vice president for global strategy, investor relations, and corporate communications for Brightpoint, Inc., a global leader in the distribution of wireless devices and in providing customized logistic services to the wireless industry.

Richard Jacobson

(ME '94), Highland Park, Ill., is chief executive officer of the Jacobson Group, a national professional and human capital-services firm serving the insurance, health care, and financial services industries. Jacobson recently began authoring a blog, offering insight on timely topics affecting the firm's niche industries.

→ Robert Pierce

(CE '94), Chicago, is a Certified Internal Auditor and works for the American Hospital Association. Pierce enjoys international travel.

→ Bill Hartman

(M.Des. '95), Brookline, Mass., is director of research and strategy at Essential, a consultancy in downtown Boston. He and his wife, Laura, have two children, ages 13 and 11. Hartman enjoys running, skiing, and visiting with his ID friends whenever they manage to cross paths.

→ Tim Shea

(LAW '95), Arlington, Va., is a partner in the biotech/chemical group at Sterne, Kessler, Goldstein & Fox, PLLC, an intellectual property firm in Washington, D.C. He and his wife, Katherine, have three daughters. In his free time, Shea coaches his daughters' soccer team.

David Slutzky

(LAW '95), Charlottesville, Va., and his wife, Melissa, founded the environmental and economic policy firm E2Inc. As a recognized expert on environmental policy issues, Slutzky served in the White House as a senior policy advisor, where he led the International Task Force of the President's Council on Sustainable Development. He is a part-time urban and environmental planning professor at the University of Virginia.

→ John Kelly

(M.A.S. ENVE '96), San Francisco, and his wife, Shaheerah Kelly (CHE '96), are both working toward clean air in the United States Environmental Protection Agency's San Francisco office. They have two daughters.

Gail O'Connor

(LAW '96), Chicago, has been named to the 2009 "40 Illinois Attorneys Under Forty to Watch" by the Law Bulletin Publishing Company. She is a solo family-law practitioner focusing on custody litigation. In addition to representing parents, O'Connor is often appointed by the judges in the Domestic Relations Division to represent children who are the subject of custody disputes.

→ Susan (Held) Andersen

(LAW '97), Austin, Texas, is global labor and employment counsel for Whole Foods Market. She has three children, ages 11, 9, and 6.

→ Janina Malone

(LAW '97), Portland, Ore., is a principal with Janina A. Malone, PC. She and her husband, Baxter, have a 4-year-old son.

Peter Spingola

(LAW '97), Park Ridge, Ill., has been named to the 2009 "40 Illinois Attorneys Under Forty to Watch" by the Law Bulletin Publishing Company. He is a partner with Chapman & Spingola, LLP, concentrating on complex commercial and intellectual property matters. Among his courtroom successes is a \$22 million judgment for Swift Engineering from two Fortune 500 defense contractors for technology that launched the next generation of unmanned air vehicles.

→ Elizabeth Stewart

(LAW '97), Naperville, Ill., is employed as a legal assistant at Barnes & Thornburg, LLP. She is married to John Miller; they have three children, ages 25, 17, and 6.

James Abbott

(LAW '98), Geneva, Ill., joined the Chicago office of Litchfield Cavo as a partner in June 2009. Abbott practices in a wide variety of general commercial litigation and trial settings, including product liability; toxic torts; medical malpractice; professional and executive liability; construction, labor, and employment; and municipal law. He was previously with Bollinger, Ruberry & Garvey.



TWO-WHEELED CRUSADER



Bob Hoel (BE '70)

Clinking glasses of freshly pressed juice to toast the completion of the grape harvest with field workers in France's Loire Valley was just one of life's unexpected pleasures that Bob Hoel (BE '70) has experienced by swapping four wheels for two. Hoel, who was inducted into the Active Transportation Alliance 2009 Hall of Fame for his bicycle advocacy efforts, and his wife, Nancy, take at least one vacation each year where their custom-made red, white, and blue DaVinci tandem bicycle is their primary mode of local transportation.

At home in western suburban Elmhurst, Ill., Hoel is known as the "Bike Guy" for his roles as director of advocacy for the Elmhurst Bicycle Club and as chair of the Bicycle Task Force for the City of Elmhurst. Hoel admits that he began bicycling in the mid-1990s because a recurrent ruptured back disc ended his running regimen. Since then, he has embraced bicycling and on the average, logs 3,000–5,000 miles between his three bikes annually, estimating that 75 percent of that mileage is spent running daily errands.

"You need a way to safely haul eggs and chips," says the practical Hoel, noting that besides a helmet, a backpack is an integral accessory. Between that and his over-the-wheel panniers, Hoel has carried up to 40 pounds of purchases on his silver Specialized Sirrus 24-speed, his workhorse around-town bike. "National statistics say that the rate of errand biking has now hit 1 percent; that's up from 0.7–0.8 percent two years ago," he notes.

Hoel decided to pursue bicycle advocacy in 2008 after a few encounters with drivers who were "blatantly aggressive in effectively using a 4,000-pound vehicle to intimidate." He felt that a city-appointed task force would ultimately offer the greatest benefits to bicyclists and help to encourage new riders, and approached Elmhurst officials through organized efforts within his local bike club. Recently retired after a 34-year career with RR Donnelley and Sons Company, Hoel says after nine months of planning with club members, the city gave him the go-ahead to launch the task force.

"A wonderful collaboration has been allowed to go forward to serve the Elmhurst community relative to biking because of his efforts," says Thomas P. Borchert, city manager, who notes that the current mayor, Peter DiCianni, has reauthorized the Bicycle Task Force to help identify additional ways that Elmhurst can become a more bicycle-friendly community.

Elmhurst residents can now find plenty of useful information on the city's website, including a recommended route map to the Elmhurst Metra station, Illinois bicycle laws, and bike safety tips. Hoel also serves on IIT's Sustainability Committee and is advising members on how to make bicycling to Main Campus an attractive and doable option for more individuals.

"Bob uses his own entrepreneurial skills and experience—a unique combination—for community organizing," says Rob Sadowsky, executive director of Active Transportation Alliance, North America's largest transportation advocacy organization. "By connecting with local leaders and building partnerships through his bicycling plan, he is making Elmhurst a more livable community."

—Marcia Faye

MORE  ONLINE

Active Transportation Alliance: www.activetrans.org

City of Elmhurst Bicycle Task Force: www.elmhurst.org/index.aspx?nid=782

→ **Christina Bonner**

(LAW '98), San Francisco, is senior manager of intellectual property licensing for Dolby Laboratories, Inc. She received an M.B.A. from Thunderbird School of Global Management in 2006.

→ **Patrick Sullivan**

(M.S. FMT '98), Madison, N.J., works as a trader. He is involved in his children's activities, including coaching soccer.

→ **Kimberly A. Terrell**

(CPE '98), Washington, D.C., is founder, chief executive officer, and principal of Katz International Management Solutions, LLC, a technical project-management company with a NASA niche. She is also a scuba diver and is active in the Washington metropolitan community.

→ **Lana Vukovljak**

(M.S. TCID '98), Oak Park, Ill., is a chief executive officer with American Association of Diabetes Educators. She and her husband, Jeko, are avid skiers. The Vukovljaks have two sons.

Lillian Hritz

(M.S. CS '99), Tombstone, Ariz., has been recognized by *Cambridge Who's Who* for demonstrating dedication, leadership, and excellence in education administration. She is statewide instructional technology project coordinator for the Office of the Pima County School Superintendent and is recognized as an authority on technology integration and professional development.

→ **Sandra Le**

(CHE '99), Arlington, Va., is an associate attorney with R. E. Bushnell & Law Firm, an intellectual property law firm in Washington, D.C. She and her husband, Justin Spears, have a 2-year-old son and are expecting their second child.

2000s

Roger Hahn

(LAW '00), Fairfax, Va., and his wife, Autumn, welcomed home fraternal twins, Ivy and Ellie, on October 9, 2009. Their Korean names are Yoonjoo ("brilliant diamond") and Sarang ("love"), respectively.

→ **Richard Labrador**

(LAW '00), Chicago, is assistant public defender at the Law Office of the Cook County Public Defender. He enjoys reading, art, and outdoor activities, including biking and camping.

Mitchell B. Gordon

(LAW '01), Chicago, has been named to the 2009 "40 Illinois Attorneys Under Forty to Watch" by the Law Bulletin Publishing Company. Gordon is a family law attorney at Pasulka & White, LLC. Committed to educating the public about legal issues, he is host of the public access television show "Let's Talk Justice!" on Chicago's CAN-TV network.

→ **Patrick Markey**

(LAW '02), Chicago, is the owner of the Law Offices of Patrick Markey, PC since 2006, concentrating in family law and collaborative divorce. He became a fellow of the Collaborative Law Institute of Illinois in 2009.

Colette Walsh

(LAW '02), Cranford, N.J., is a labor and employment law attorney with the United States Postal Service in New York. She and her husband, Tom, moved from Chicago to New Jersey in September 2009.

Seth Darmstadter

(LAW '04), Chicago, was profiled in the September 2009 issue of *Chicago Lawyer* in an article about IIT Chicago-Kent's appellate advocacy teams. He was a member of the trial advocacy team while at Chicago-Kent and continues to participate with the team as a coach. Darmstadter is an associate with Meckler Bulger Tilson Marick & Pearson, practicing complex commercial and insurance coverage counseling and litigation. He also has a quarterly column in *Chicago Lawyer*.

William Gibbs

(LAW '04), Chicago, has been named to the 2009 "40 Illinois Attorneys Under Forty to Watch" by the Law Bulletin Publishing Company. An associate with Corboy & Demetrio, Gibbs focuses on automobile collisions, medical negligence, railroad negligence, and premises liability cases. He recently was co-counsel in a case with a record-breaking \$29.6 million verdict for an individual injured in the derailment of a Metra train.

David Hovey Jr.

(M.A.R. ARCH '04), Phoenix, Ariz., received an Honor Award for Relic Rock at the 2009 Celebrate Architecture Awards Gala, sponsored by the Arizona Chapter of the American Institute of Architects. David Hovey and Associates, the firm established by his father, David C. Hovey (ARCH '67, M.S. '71), also received an Honor Award for Optima Camelview Village.

→ **Nicole Thibodeau**

(LAW '04), Anchorage, is self-employed as a contract attorney. She and her husband have two children, ages 4 and 2.

→ **Karthika Arunachalam**

(M.S. CS '05), San Diego, is a software engineer in LGE Mobile Research. She and her husband enjoy traveling, hiking, and being with friends.

→ **George "Mackie" Derrick**

(CHE '05), Anchorage, is a rig workover engineer with BP Exploration Alaska. He and his wife, Laurie, were married in September 2009, and enjoy biking and skiing around the world.

Shahid Haque-Hausrath

(LAW '05), Helena, Mont., was awarded the 2009 Neil Haight Pro Bono Award from the Montana State Bar Association for his work in providing free legal services to low-income Montanans. Haque-Hausrath dedicates his practice primarily to helping immigrants obtain legal status in the United States.

Rachel Zahorsky

(LAW '06), Streamwood, Ill., was quoted in a September 2009 *Chicago Lawyer* article about alternative careers. Zahorsky has been a reporter with the *ABA Journal* since October 2008.

Michael Hagan

(EMGT '07), Albuquerque, N.M., is a first lieutenant in the United States Army. He deployed to Iraq as senior logistics officer for an AH-64D Apache Attack and Reconnaissance Battalion.

Nathan Hinch

(LAW '07), Winfield, Ill., opened Hinch Law in Wheaton, a firm that focuses on construction, real estate, business, and environmental law. He was previously with the engineering firm Sheaffer International, where he served as operations manager/in-house counsel.

→ **Jessica Fender**

(LAW '08), Chicago, completed a clerkship with the United States Court of Appeals for the Federal Circuit in Washington, D.C. She currently works in the Chicago office of Schiff Hardin, LLP.

Erica Cortez

(LAW '09), Chicago, joined Ungaretti & Harris, LLP as an associate in the litigation department.

HUGH STORY MEMORIAL ROSE GARDEN

On March 19, the Hugh Story Memorial Rose Garden was dedicated in San Diego. The garden honors Story (ME '43) for the many landscape beautification projects he coordinated through the community-oriented Point Loma Association, of which he was president and founder. He was affectionately known as "Point Loma's Johnny Appleseed" for his efforts in planting more than 700 trees to enhance the appearance of many derelict properties in the area.

Photos: Charlotte Story



A plaque in memory of Hugh Story appears in the garden.



Three of Hugh and Marilyn Story's five children [left to right]—Kim Waters, Magita Story, and Hugh Story Jr.—with their mother, Marilyn Story

Hats Off...To You

Your donations to Illinois Institute of Technology
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By making a donation to the IIT Fund or IIT Alumni Scholarship Fund, you directly helped current students to realize their academic dreams. IIT and IIT students depend on the generosity of alumni and friends to make the IIT educational experience possible.

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IIT Annual Giving

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Stuart Graduation Reception

Associate Dean Thomas Anderson celebrates with December 2009 graduates from IIT Stuart School of Business at a reception held at the Downtown Campus.



Lunch at MoMA

Walter Ciciora (EE '64, M.S. '66, Ph.D. '69) and Robbie Deveney, IIT senior director of alumni and donor relations, enjoy lunch after the New York City Museum of Modern Art tour of Bauhaus 1919–1933: Workshops in Modernity. Photo: Shar Smullyan



Canada Convention

IIT alumni and staff at the 2010 National Society of Black Engineers Convention in Toronto with NSBE Executive Director Carl Mack [left to right]: Andre Phillips, Lou Hureston (EE '82), Michelle Kalnasy, Andrea Berry (CS '84), Mack, IIT Senior Director of Alumni and Donor Relations Robbie Deveney, Michael Hill (CS '82), and IIT Vice Provost for Undergraduate Admission and Financial Aid Jerry Doyle



NSBE Networking

Lou Hureston (EE '82) with students Marco Ndoping (EE 4th year), Yeamlaksira Awol (CE 1st year), and Remi Adejinle (CHE 4th year) at the 2010 National Society of Black Engineers Convention in Toronto



Endowed Chair Recognition

S. R. Cho (M.A.S. CHE '66), member of the IIT International Board of Overseers, is flanked by [left] Darsh Wasan, IIT vice president of international affairs, and [right] IIT President John Anderson. Cho was presented with a medallion for the Hyosung S. R. Cho Endowed Chair in Engineering, of which he is the benefactor. Cho was joined by [left] board members Jamshyd Godrej (MAE '72), Kaarina Koskenalusta, and [far right] Sam Pitroda (M.S. EE '66). The group gathered in Mumbai for the India Commencement Ceremony on February 27. Photo: A K Mustufa



Arizona Gathering

Peter Koliopoulos (ARCH '86) and his wife, Lynn, hosted President John Anderson and Phoenix IIT alumni at their home this spring. Photo: Tim Trumble



A Tech Tradition

IIT alumni and parents watch the Scarlet Hawks baseball team play in Southern California during spring break. Photo: Jenna Albright



The IIT International Board of Overseers met on February 27 in Mumbai, India. Photo: A K Mustufa



Lohans Celebrate Mies

Landscape architect Peter L. Schaudt [left] with architect and grandson of Mies van der Rohe Dirk Lohan, Lohan's wife, Catherine, and son Carsten. Photo: Bonnie Robinson

ALUMNI AWARDS 2010

2010 Alumni Awards Recipients

Alumni Medal

Martin Cooper (EE '50, M.S. '57)

Martin Cooper, who conceived of and created the cellular telephone, is a Life Trustee of Illinois Institute of Technology. He is the executive chairman and co-founder of ArrayComm LLC, the leading provider of smart antenna technology.

Kunihiro Misu (M.S. ARCH '66)

Kunihiro Misu is chairman of the world-renowned architecture firm Nikken Sekkei Ltd. As a member of the Illinois Institute of Technology International Board of Overseers, Misu has done much to connect alumni the world over.

Collens Merit Award

Les Hardison (ME '50)

Galvin Award

Craig J. Duchossois

Alumni Service Award

Norbert Kaiser (IE '63)

Global Service Award

Kalyanji Gala (M.S. IE '66)

Tetsuyuki Hirano (ARCH '79)

Lifetime Achievement Award

Sidney Coleman (PHYS '57)

Henry Linden (Ph.D. CHE '52)

John Mitchell (EE '50)

Outstanding Young Alumnus Award

Michael McCullar (ME '00)

Professional Achievement Award

Andrea Berry (CS '84)

William Gross (ME '52)

Watts S. Humphrey (M.S. PHYS '50)

Mahesh A. Iyer (M.S. EE '91, Ph.D. '95)

Loretta Moore (M.S. CS '86, Ph.D. '91)

Al Ver (CHE '68)

Paul Wattelet (PHYS '62)



The inaugural Galvin Award, created to honor non-alumni who provide leadership, time, talent, and resources to make a significant impact on the university, was presented to Trustee Craig Duchossois. He could not attend, but daughter, Ashley Duchossois Joyce, and sister, Kimberly Duchossois, accepted on his behalf.



IIT President John Anderson gives the Alumni Medal to Kunihiro Misu (M.S. ARCH '66).



University Regent Robert Galvin [left] with Alumni Medal winner Martin Cooper (EE '50, M.S. '57)

Photos: Bonnie Robinson

HOMECOMING WEEKEND 2010

Golden Society Reunion
Saturday, September 25, 2010

CELEBRATING

the Classes of 1960 and Earlier



Generations Come Together

We welcome you back to IIT's Main Campus during Homecoming weekend to celebrate more than a century of tech traditions and to commemorate the induction of the Class of 1960 into the Golden Society, an honorary society established to recognize alumni who have celebrated the 50th anniversary of their graduation from IIT. All alumni from the Class of 1960 and earlier are encouraged to attend and reunite with old friends.

This year's Golden Society Reunion luncheon will be hosted by IIT's Gunsaulus Society on Saturday, September 25, 2010. If you plan to arrive on Friday, September 24, we will be hosting an evening party in The Bog, and we invite you to stay for the weekend to enjoy IIT's Homecoming activities and carnival on Saturday, September 25, 2010. If you missed your 50th reunion year, join us this year to receive your medallion and take a walk down memory lane.

Email us at alumni@iit.edu for Homecoming updates, or check the Web at <http://alumni.iit.edu>, and stay tuned for more information as the date nears.

Velocity *goes local*

Nearly 1,200 alumni nationwide have been interviewed about their IIT experiences through The Velocity Initiative, the university's alumni reengagement effort. This spring, Velocity focused on reestablishing ties with more Chicago-area alumni.



Through Velocity, many alumni have said they want to engage with IIT as volunteers. The Alumni Board Volunteer Management Committee was developed as a standing committee of the Alumni Board to meet the volunteer needs of alumni and the university. The alumni serving on the committee are working to assess and create opportunities in the top four areas of volunteer interest: job recruiting

and placement, mentorship, speakers' bureau, and admissions. The committee chair is Michael Hill (CS, EE '82), and those who sit on the committee are Jeff Anderzhon (ARCH '73), Andrea Berry (CS '84), Marva Boyd (EE '87), Reginal Campbell (ITM '05), Athar Khan (EE '99), Lee Sheridan (CHE '65, M.S. '67), and Senior Director of Alumni and Donor Relations Robbie Deveney.

In February, the Velocity team welcomed Adriana Rios (ARCH '09) as a full-time Velocity ambassador. She joins other full-time ambassadors and current student ambassadors in their efforts to reconnect IIT with alumni in Chicago and beyond.

● <http://alumni.iit.edu/velocity>

DISCOVERIES

Fun facts about IIT alumni interviewed through Velocity:

- An EE alumnus in Florida won a 2010 Design Innovation Award from the Consumer Electronic Association.
- An EE M.S. alumnus who worked for Texas Instruments for 23 years holds 13 patents.
- A 1938 CHEM alumnus who began his impressive career as a chemist for the United States Army during World War II has been a political activist for the aging for more than 30 years and currently writes a newspaper column.
- The National Society of Professional Engineers named an ENVE Ph.D. alumnus as the 2009 Federal Engineer of the Year.



Alumni Holiday International Discovery Tours

Grand Journey Spain
October 14–26, 2010

This great itinerary starts in Madrid, then heads north to Segovia, Avila, Salamanca, and Burgos. You'll continue on to the wine country of La Rioja, enjoy stops in Bilbao and Zaragoza, and conclude the journey in Barcelona.

For more information, please contact <http://iit.ahitravel.com> or Marian Quirk at 312.567.5000.

Admission Recruitment Program

Calling all San Diego-, Phoenix-, and Seattle-area alumni, as well as alumni from Hawaii: We need your help recruiting at upcoming college fairs!

As an alumnus or friend of IIT, you have a distinct connection to the university through your personal experiences. Sharing your IIT knowledge during the college selection process can be helpful to prospective students and parents. The Alumni Admission Program offers volunteer opportunities for you to share IIT facts and stories. The time you invest is up to you.

For additional information, please contact Marian Quirk at quirk@iit.edu or visit www.iit.edu/undergrad_admission/alumni.



Upcoming Alumni Events

For information about upcoming alumni events listed below and other alumni activities, please contact the Office of Alumni Relations at 312.567.5040 or alumni@iit.edu.

Family Day at the Morton Arboretum

Saturday, June 12, 2010

The Morton Arboretum

4100 Illinois Route 53

Lisle, Ill.

Join the IIT Alumni Association for a day of family fun at the Morton Arboretum. Enjoy tours, children's activities, and the opportunity to mingle with fellow alumni in the western suburbs.

Thirsty Thursday and Cubs Game

Thursday, June 17, 2010

Goose Island

3535 North Clark Street

Chicago

Join us for a midday Thirsty Thursday at Goose Island in Wrigleyville, followed by Cubs vs. Oakland (1:20 p.m. start). Tickets are available on a limited basis; contact the Office of Alumni Relations to reserve your space.

Thirsty Thursday and White Sox Game

Thursday, July 8, 2010

Join us for a midday Thirsty Thursday in The Bog for games, bowling, and food. Then head to the ballpark to see the White Sox take on the Los Angeles Angels (1:05 p.m. start). Tickets are available on a limited basis; contact the Office of Alumni Relations to reserve your space. Complimentary on-campus parking will be available.

Alumni Association Marathon Group Bank of America Chicago Marathon™

Sunday, October 10, 2010

Attention, athletes! Are you running in the 2010 Chicago Marathon? Tell us who you are so we can cheer you on as you pass IIT! A banner featuring the names of competing students, faculty, staff, and alumni will be on display along the marathon route through Main Campus. Runners will also be recognized in *IIT Today*, the university's weekly e-newsletter.

Sixth Annual Pumpkin Launch

October 2010

IIT Main Campus

Chicago

Student groups show off their contraptions. See which one can hurl a pumpkin the farthest.

Darsh T. Wasan Lecture

Wednesday, October 13, 2010

IIT Main Campus

Chicago

This year's lecture will feature keynote speaker Susan Solomon (CHEM '77), senior scientist with the National Oceanic and Atmospheric Administration. The first person to explain how chlorofluorocarbons destroy the ozone layer, Solomon shared in the 2007 Nobel Peace Prize for her role as co-chair of the Intergovernmental Panel on Climate Change.

HOME COMING

Saturday, September 25, 2010

Homecoming weekend brings alumni and students together to celebrate their lifelong connection to IIT. If you have not visited IIT in recent years, this is the perfect opportunity to see the many changes to its landmark campus. Join IIT students in showing your school spirit, and rediscover the traditions that made your time at IIT memorable. Homecoming events will include walking tours, a carnival with games and activities for all ages, and friendly competitions for alumni.

GOLDEN SOCIETY REUNION

Saturday, September 25

The Golden Society Reunion recognizes alumni who are celebrating the 50th anniversary of their graduation from IIT. Members of the Class of 1960 will receive their Golden Society medallions, be recognized for this anniversary milestone, and have a chance to visit with former classmates.

atechtradition

Families enjoyed the many games and crafts offered during last year's Homecoming Carnival in Hermann Hall. Photo: Bonnie Robinson

THE GUNSAULUS SOCIETY AT IIT IS PROUD TO SPONSOR

2010 Golden Society Reunion Luncheon

Saturday, September 25, 2010
Celebrating the Classes of 1960 and Earlier



The Class of 1959 inductees revisited Main Building at the 2009 Golden Society Reunion.

Join us at the **2010 Golden Society Reunion**

Luncheon to celebrate eight decades of tech traditions. During Homecoming weekend, IIT will induct the Class of 1960 into the Golden Society, an honorary society established to recognize alumni who have celebrated the 50th anniversary of their graduation from IIT. The Gunsaulus Society invites all alumni of the Class of 1960 and earlier to eat, drink, and be merry with old friends at IIT's Main Campus on **Saturday, September 25, 2010.**

IIT established the Frank Wakely Gunsaulus Society to recognize all those who have provided an estate commitment to the university regardless of type or amount. The society celebrates those who envision a bright future for a school dedicated to preparing students from all backgrounds to fill meaningful roles in an ever-changing society.

DON'T KEEP YOUR GIFT A SECRET!

If you have named IIT as a beneficiary of your estate, please let us know so we may properly thank you and include you as a member of our esteemed Gunsaulus Society.

For more information about the Gunsaulus Society or to learn about how you can make a lasting impact at IIT through a charitable gift annuity, please contact Elaine Clay, assistant director of planned giving, at 312.567.5028 or plannedgiving@iit.edu.

Gunsaulus | SOCIETY

obituaries

inmemoriam

John Gilman

ME '46, M.S. MET '48

A materials scientist and adjunct professor at the University of California, Los Angeles, John Gilman was also a member of the National Academy of Sciences. While an IIT student, he was the recipient of a William Campbell Fellowship in metallurgical engineering. In 1962, Gilman received a Distinguished Service Award from the IIT Alumni Association.

Franz Altschuler

DSGN '48

Franz Altschuler began making his mark in Chicago's art scene when he became illustrator for *Playboy* soon after the magazine's inception in 1953. Besides working at *Playboy*, Altschuler taught at IIT Institute of Design in the late 1950s and at the School of the Art Institute of Chicago in the 1970s. His illustrations also were featured on book covers, and in textbooks and annual reports. For many years, Altschuler lived in Chicago's Old Town community and was active in the Old Town Triangle Association, where he worked to preserve the neighborhood's artist colony environment.

Altschuler is survived by his wife, Dori, and a sister.

Frederic Roberton

DSGN '51

Founder of the Chicago firm Design Consultants Incorporated, Frederic Roberton had a long career in innovative product development and graphic design. He served in various leadership roles at IIT, including as a member of the Board of Trustees and on the IIT Alumni Association Executive Committee. Roberton also was president of the association from 1975–76 and received an Award of Merit from the organization in 1984.

Donald Hilbring

M.P.A. '90

Donald Hilbring began his longtime career as a patrol officer with the Chicago Police Department in 1968, rising through the ranks to commander of the Wentworth District. His final position was as a watch commander in the South Chicago District. Hilbring also moonlighted as a math teacher for many years in the Chicago Public Schools system. In 1992, Hilbring was the recipient of a Community Recognition Award from the IIT Office of Community Development.

Platon C. Deliyannis

Department of Mathematics

Platon Deliyannis served as chair of the Department of Mathematics (now Applied Mathematics) from 1975–1981 and on the faculty for more than 35 years, retiring from the university in 2001. His son, Constantine Deliyannis (PHYS '80), is an associate professor in the Department of Astronomy at Indiana University Bloomington.

"Platon was a superb colleague, a fine scholar, and one of the best teachers I have ever known," says Jerry Frank (M.S. MATH '69, Ph.D. '72), who served as professor of mathematics from 1976–2008 and as chair of the Department of Mathematics from 1986–1992. Deliyannis hired Frank, and was his friend and colleague for more than 40 years.

Deliyannis is also survived by his wife, Virginia, a daughter, and several grandchildren.

Sidney Guthman

ARSC '32
Los Angeles

Torgny Westerberg

CE '32, M.S. '33
Inverness, Ill.

Elizabeth Dixon

HE '38
Wellfleet, Mass.

William Grosse

CHE '41
Houston

William Brausa

CHE '42
Bellflower, Calif.

Jean Jacobs

ARSC '42
Columbus, Ohio

William Loben

ME '42
Bayonet Point, Fla.

Paul Mayer

CHE '42
Los Angeles

Irwin Lachman

CE '43
Sherman Oaks, Calif.

Leo Orsi

CHE '43
Edmond, Okla.

Sheldon Plotkin

CHE '43
Palm Desert, Calif.

Mortimer Lowy

ME '44
Los Angeles

Roy Norrlander

ME '47
Rockford, Ill.

Herbert Levinson

CHE '48
Sedona, Ariz.

George Adams

ME '49
Columbus, Ohio

Robert Downer

BE '49
Cottage Grove, Wis.

Robert Scharding

EE '49
New Cumberland, Pa.

Milton Searl

BE '49
Davisburg, Mich.

Otto Nerad

ARCH '50
La Grange Park, Ill.

Robert Butcher

CE '51
Palm Bay, Fla.

John Murphy

IE '51
Waukegan, Ill.

Donald Kirsh

CHE '53,
M.S. BEA '60
Des Plaines, Ill.

Walter Bartky

PHYS '54
Chicago

Thomas Ogilvie

ARCH '54
Miami

Richard Solomon

FPSE '55
Naperville, Ill.

Leonard Booth

ME '56
Portland, Ore.

Arnold Dworkin

LAW '56
Glencoe, Ill.

Constantine Farmans

LAW '56
Torrance, Calif.

Edward Fauth

M.S. ME '56
Aurora, Ill.

Arthur Leach

CHE '57
Bloomington, Ind.

John Patronik

IE '57
South Holland, Ill.

Melvin Triplett

EE '61
Los Angeles

Joseph Pinnello

EE '62, M.S. '68
Arlington Heights, Ill.

Peter Rolewicz

LAW '63
Chicago

Stephan Tsai

Ph.D. EE '65
Silver Spring, Md.

Kenneth Stack

MAE '68
Hemet, Calif.

Alexander Nowicki

EE '69
Huntley, Ill.

David Struckhoff

M.S. SOC '71
Joliet, Ill.

Frederick Wein

LAW '74
Plainsboro, N.J.

George Brousalis

EE '82
Munster, Ind.

Rajendra Borwankar

Ph.D. CHE '84
Chicago

Elpidio Quiballo

M.B.A. '85
Clarendon Hills, Ill.

Joseph Rago

LAW '86
Geneva, Ill.

Jeffery McNary

M.P.A. '87
Hanover Park, Ill.

Ellen Clark

LAW '89
Evanston, Ill.

Allen Sander

M.P.A. '89
Huntley, Ill.

Marc Berlin

LAW '91
Miami

Jennifer Steensland

LAW '03
Barrington, Ill.

Bernard Stoltie

Attendee/
non-degree
New Haven, Conn.

by Marcia Faye

Transforming Education, *Literally*

On April 23, 1940, Armour Institute of Technology and Lewis Institute merged to become Illinois Institute of Technology. Five months later, IIT began operations with Henry T. Heald as president and with a new university seal, which combined Armour's torch symbol and Lewis's tree symbol. When Chicago-Kent College of Law joined IIT in 1969, a third symbol—an open book—was added to the seal, which remains as such today.

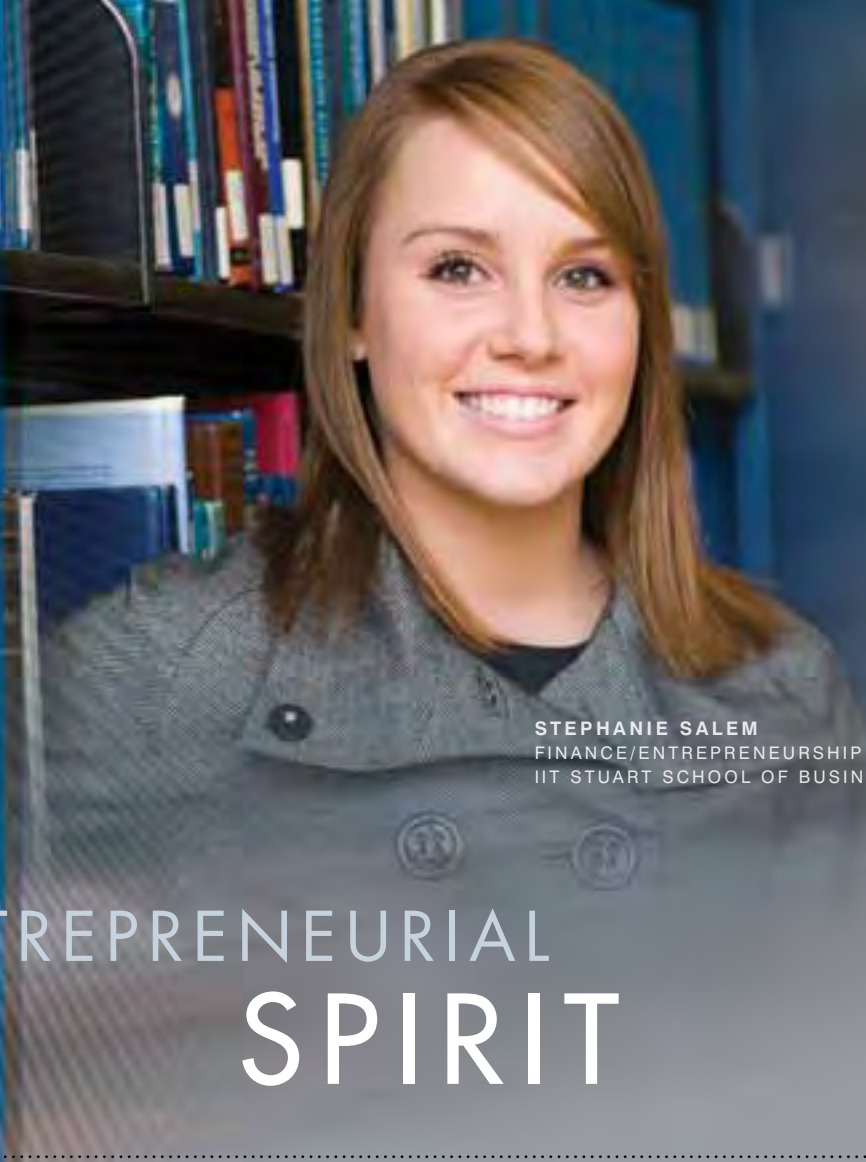
In the early 1970s, IIT Institute of Design offered its first courses in the then-burgeoning field of computer graphics. Distinguished Professor Emeritus Charles Owen taught ID students how to write application programs and use graphics in the output with the help of XFORM, a software program that he created.

Alonso Miranda (M.S. DSGN '83) and Maria Lanita Miranda utilized XFORM to do an animation in matrix form, transforming the university seal into the IIT logotype. Moving across the matrix, one set of coordinates holds steady while the other changes; moving down the matrix, the opposite occurs. The individual illustrations are computer-generated interpolations of even steps through the animation.

"The Institute of Design was 15 years ahead of its competition worldwide in the use of computers in design," says Owen.

To learn more about IIT history, visit the extensively revised and newly designed website of the IIT Archives, <http://archives.iit.edu>.





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IIT STUART SCHOOL OF BUSINESS

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To learn how you can become involved with IIT Stuart School of Business, contact:

Harvey Kahalas
Dean, IIT Stuart School
of Business
312.906.6596
bizdean@stuart.iit.edu

We believe students with degrees in STEM+ fields will be the future leaders who drive change in areas of global significance: energy independence, improving people’s health, protecting the environment, and strengthening national security.

Recipient of a full-tuition scholarship for both her academic and athletic achievements, Stephanie Salem is an IIT student excelling in STEM+ fields. She is one of a select group of 25 students and the only business student participating in IIT’s Kern Innovation and Entrepreneurship Academy, where she is helping engineering students channel their good ideas into business ventures such as startup companies. Salem is also on IIT’s Innovation and Entrepreneurship Academy Leadership Council and won top honors in two competitions—the 2009 Chicago Innovation Chase and the 2009 IEA Idea Challenge—for her contributions to product design and development in the marketplace.

If you know prospective students like Stephanie—who share your passion for STEM+ fields—we invite you to refer them to us. Please contact Gerald P. Doyle, vice provost, undergraduate admissions and financial aid, at 312.567.5203 or doyle@iit.edu.



HOMECOMING 2010
SATURDAY, SEPTEMBER 25, 2010

Generations Come Together

This year, join alumni, friends, and current students to celebrate more than a century of tech traditions. Show your school spirit and rediscover the connections that made your time at IIT memorable. Food and family fun will be available for all during these commemorative events. Email us at alumni@iit.edu or check the web at <http://alumni.iit.edu> for Homecoming updates, and stay tuned for more information as the date nears.

What's Your **Tech Tradition?**

JOIN YOUR AFFINITY GROUPS

GOLDEN REUNION SOCIETY	SHPE
CAMRAS	LIFE
LEADERSHIP ACADEMY	ATHLETES
THERD HERD	INTERNATIONAL STUDENTS
ZOO	VELOCITY
NSBE	AND MANY MORE!

CREATE YOUR OWN!

atechtradition

